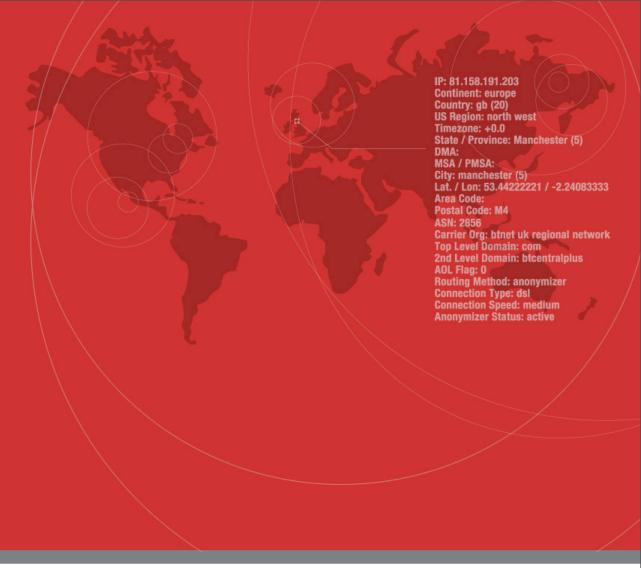


Jay Webster March 30, 2010









Three Opportunities for Fraud

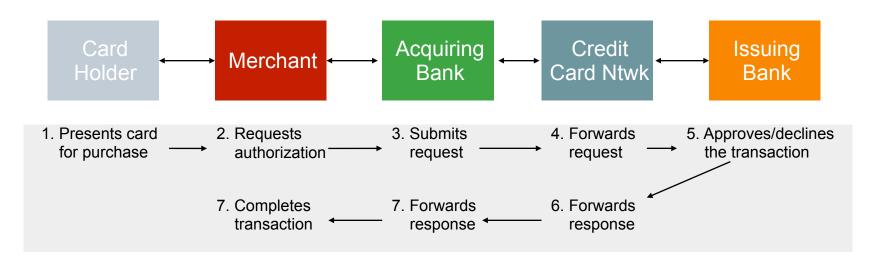
IP: 81.158.191.203
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Country: 80 CO)
US Region: north west
US Region: north west
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MSA / PMSA:
City: nanchester (5)
Lat. / Lan: S3.4422221 / -2.240833
Arva Code:
Postal Code: MA
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L

- Account sign-up (e.g. credit-card application)
- Authentication (e.g. log-in)
- Transaction (e.g. purchase, wire transfer, stock trade)



eCommerce, CNP, and Chargebacks

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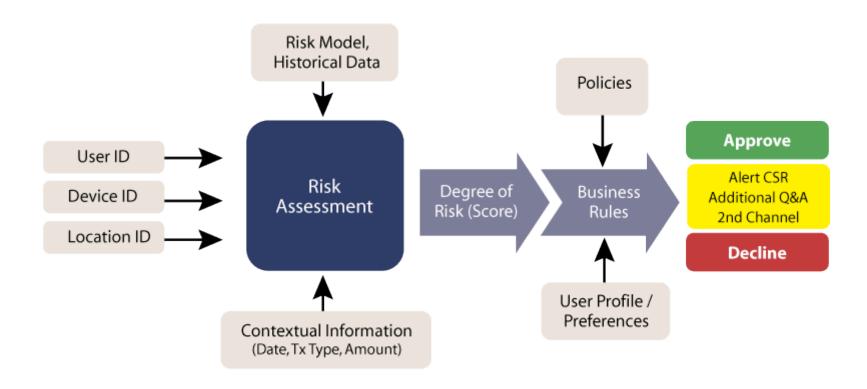


- Chargebacks occur when a consumer disputes a charge and gets a refund
- For CNP, liability rests with the Merchant Verified by Visa/Securcode by MasterCard shifts liability to the Issuer
- Payment processors charge their customers for chargebacks
 - One processor charges \$10, but it only costs \$1 to deal with chargebacks
- Management of Chargebacks
 - Merchants lose some rights with credit card companies if chargebacks rise above 1%
 - Merchants decline transactions to avoid chargebacks, including some legitimate transactions
 - Declining too few transactions means too much fraud gets through
 - Declining too many transactions means too many legitimate transactions are declined
 - Some merchants try to keep chargebacks between .08-.09%



Risk Assessment Model

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Data goes in

An analysis is made

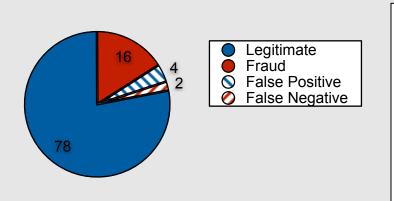
A score comes out

The user is allowed, denied, or challenged



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City: manchester (9)
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Carrier Org: Sheat uk mploral netwo
Top Level Domain: coim
270 Level Domain: toim

- Have to balance fraud capture rates with false positive rates
 - Capture rates represent the number fraud events marked/total fraud events
 - False positive rates are the number of false positives/total number of events



100 total events

20 marked fraudulent

16 actual frauds, 4 false positives

18 actual fraud events

16 marked, 2 false negatives (missed)

89% Capture rate (16/18)

5% False positive rate (4/100)

Note: Actual numbers are quite different and vary by industry and application (e.g. banking vs. eCommerce vs. gambling)

False positives

- Often indicate the rate at which legitimate users will be inconvenienced
- Can also be used to reassure users that their security is being looked after



Geolocation in RSA Adaptive Authn Policy Editor

Country to 200
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US Region: north west
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Payee	
☐ Payee type is Biller	
Payee ownership is Same Ownership	
Payee bank is Same Bank	
	Back To Top_↑
User Profile	
Days since the user ID appeared for the first time	
Days since the user ID appeared for the last time	
Number of times the user ID has appeared = 💌	
Extra Authentication was requested and failed for this user ID	
Ground speed = W KPH	
	Back To Top ↑
eFraudNetwork Data	
Should match Device Fingerprints that appear in confirmed fraud lists	
Should match Payee that appears in fraudulent payees lists	
Should match Plp addresses that appear in confirmed fraud IP list	
Should match Pladdresses that appear in Risky Proxy IP Address List	
Should match Pladdresses that appear in High Velocity IP Address List	
Should match Prountries that appear in High Risk IP country list	
Should match Produntries that appear in Low Risk IP country list	



Fraud systems primarily use Geolocation for...

IP: 81.158.191.200
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MSA / PMSA:
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P. Reful Gette: MA
Country: Grey Benet ulk regional netwo
Top Level Domain: Country Country
Top Level Domain: tricent regional netwo

- Static risk factors
 - Location specific risk (e.g. countries)
 - Risky connection types (e.g. satellite, proxies, anonymizers)
 - Comparison to registered address
- Real-time risk indicators
 - Impossible travel
 - Surge in connections from one location/ISP
- Anomalous behavior patterns
 - Current location vs. historical locations
 - Change in ISP
- Device fingerprinting
 - Geolocation characteristics used to profile a device



What Fraud Systems look for in Geolocation data

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Contilient surcepe
US Regions north west
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US Regions north west
Timezone-So
US State / Province: Manchester (5)
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MSA / PMSA:
City: manchester (8)
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Arva Code:
Postal Dode: MA
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To Level Domain: command the control of the code of

- Reduction of false positives
 - Consistency
 - More important than getting a city name correct
 - Critical when comparing current behavior to past
 - Obtained by using lat/long instead of city, ASN instead of ISP
 - Confidence Factors
 - Low confidence data can cause false positives
 - Accuracy
- Advanced data
 - Combinations of data
 - 30 miles intra-country is different from 30 miles across a border
 - Network Characteristics
- Relevant human-readable data
 - Case management is used by CSRs when talking to customers







IP: 81.158.191.203
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Country: sir CIO)
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US Region: north west
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USA: / PMSA: /

Reach

- The number of unique visitors seen and/or share of the market
- Engagement
 - The number of page-views or the time spent on a site
 - Repeat visitors
- Monetization
 - How effectively a site makes money from its users

How can Quova help any of these measurements?







Continent europe Country: 60 (200) US Region: nerth wot Timezone: 40.0 Statu / Province: Manchester (5) DMA: MSA / Province: Manchester (5) Lat. / Lon SS.44222221 / -2.2406333 Arva Code: Postal Gode: MA ASM: 2058 Carrier Org: bleast uk regional netwo Togs Level Domatin: com

Reach



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City: manchester (9)
Lat. / Lan: S3.44222221 / -2.240833
ASS. 2056
Carrier Org: Sheat uk mploral netwo
Top Level Domain: coim
270 Level Domain: toim

Reach

Indirectly through advertising, not much we can do directly



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State / Province: Manchester (5)
DMA:
MSA / PMSA:
City: manchester (p)
Lat. / Lan: S3.44222221 / -2.240833
Arva Code:
Press Joseph

- Reach
 - Indirectly through advertising, not much we can do directly
- Engagement



IP: 81.198.191.203
Continent: europe
Country: 90 CO)
Us Region: north west
Us Region: Nanchester (5)
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Area Code:
Postal Gode: NA
Top Level Domain: com
Top Level Domain: toom
Top Level Domain: toom

- Reach
 - Indirectly through advertising, not much we can do directly
- Engagement
 - Relevant content drives more clicks and pageviews



IP: 81.198.191.203
Continent: europe
Country: 90 CO)
Us Region: north west
Us Region: Nanchester (5)
Ed. / Hars: S3.4422221 / -2.240833
Area Code:
Postal Gode: NA
Top Level Domain: com
Top Level Domain: toom
Top Level Domain: toom

Reach

- Indirectly through advertising, not much we can do directly
- Engagement
 - Relevant content drives more clicks and pageviews
 - Localized pages increase the time spent on a site



Reach

Indirectly through advertising, not much we can do directly

Engagement

- Relevant content drives more clicks and pageviews
- Localized pages increase the time spent on a site
 "Increase engagement with relevant content & localized pages"



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Top Level Domain: Country
Top Level Domain: toom

- Reach
 - Indirectly through advertising, not much we can do directly
- Engagement
 - Relevant content drives more clicks and pageviews
 - Localized pages increase the time spent on a site
 "Increase engagement with relevant content & localized pages"
- Monetization



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Reach

Indirectly through advertising, not much we can do directly

Engagement

- Relevant content drives more clicks and pageviews
- Localized pages increase the time spent on a site
 "Increase engagement with relevant content & localized pages"

Monetization

Locally relevant content decreases the clicks to place an order



IP: 81.18A.191.203
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Country: sir CIO)
US Region: north west
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US Region: north west
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Reach

Indirectly through advertising, not much we can do directly

Engagement

- Relevant content drives more clicks and pageviews
- Localized pages increase the time spent on a site
 "Increase engagement with relevant content & localized pages"

Monetization

- Locally relevant content decreases the clicks to place an order
- Relevant offers increase the likelihood of purchase



IP: 81.18A.191.203
Continent: surope
Country: sir CIO)
US Region: north west
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Reach

Indirectly through advertising, not much we can do directly

Engagement

- Relevant content drives more clicks and pageviews
- Localized pages increase the time spent on a site
 "Increase engagement with relevant content & localized pages"

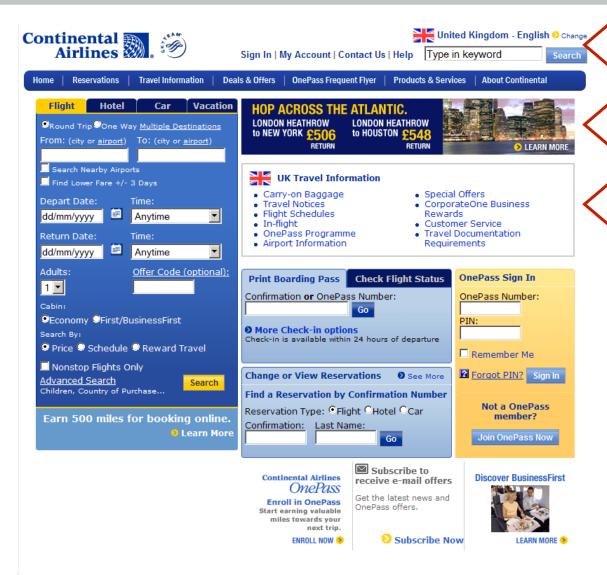
Monetization

- Locally relevant content decreases the clicks to place an order
- Relevant offers increase the likelihood of purchase
 "Increase monetization with local content and local offers"



Content localization and the REM model

Country: \$6.200 to Replay to Replay



Localized lang. > engagement

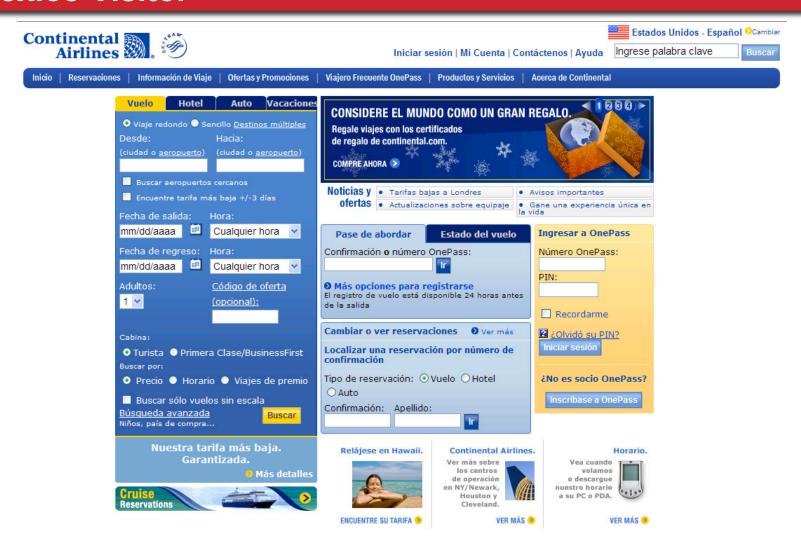
Localized offers > monetization

Localized content > engagement

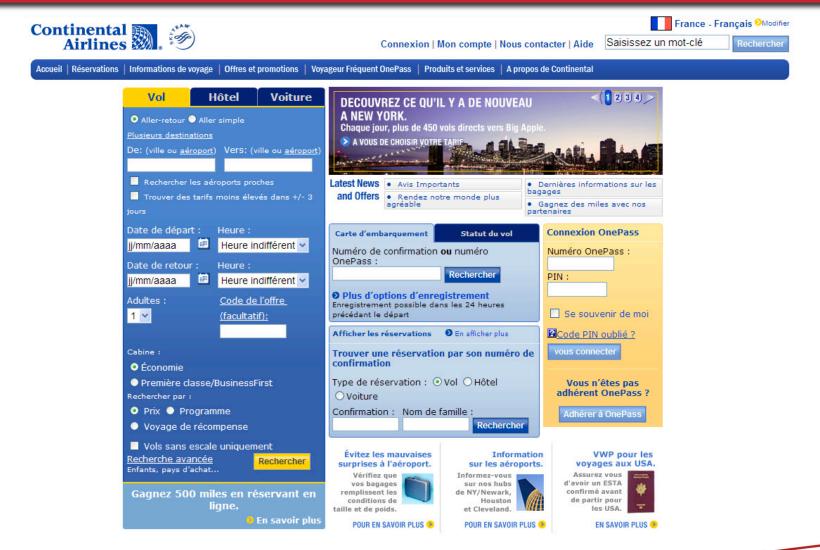
United States Visitor



Mexico Visitor



France Visitor



Japan Visitor

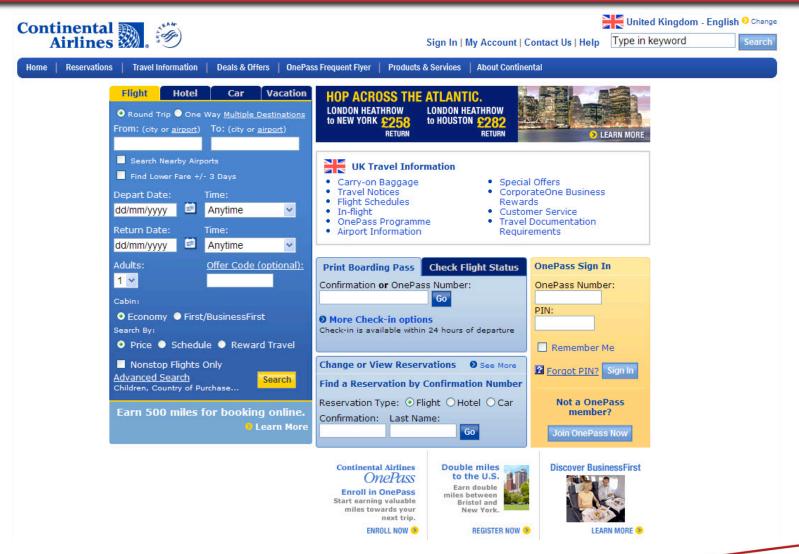


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United Kingdom Visitor

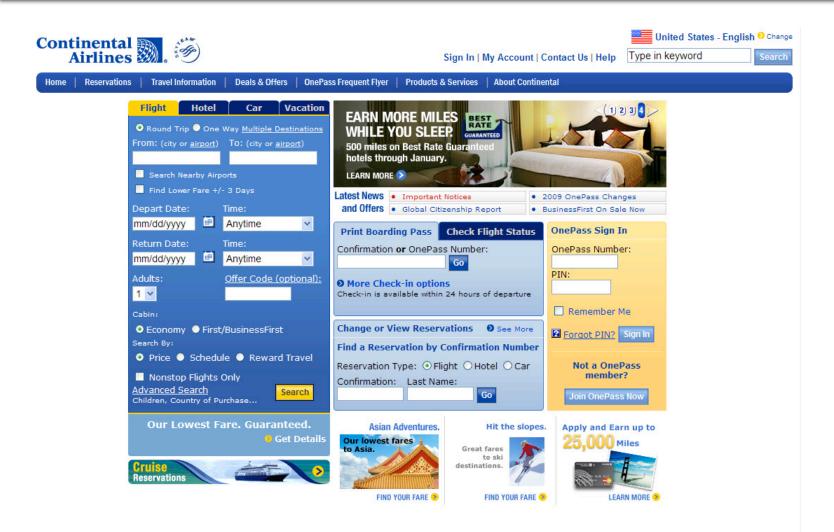


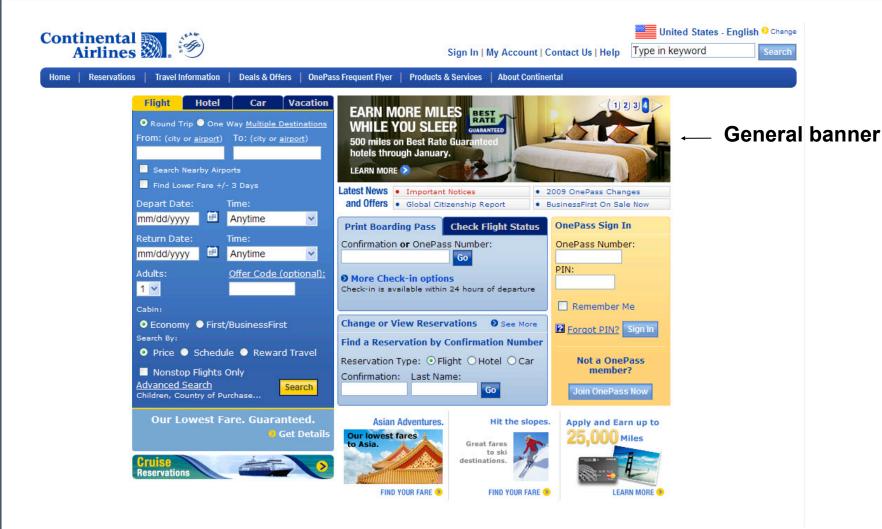
How Did They Do It?

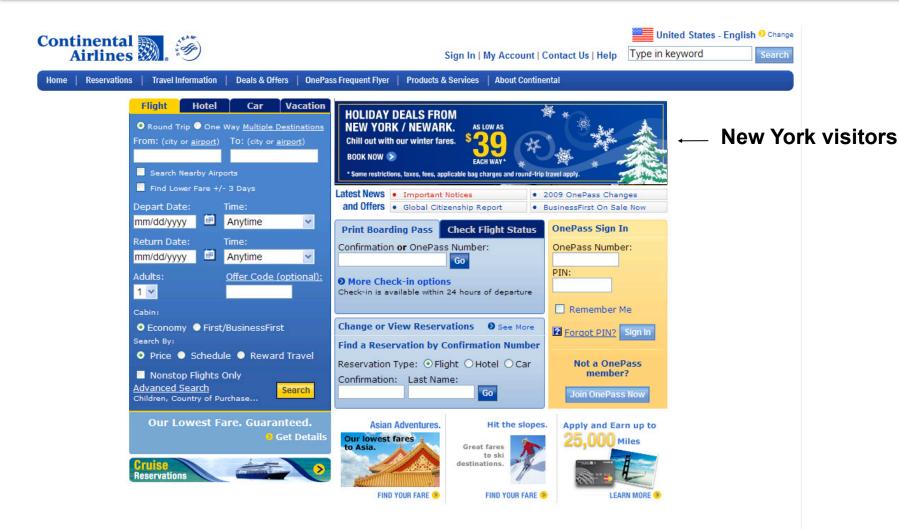
IP Geolocation

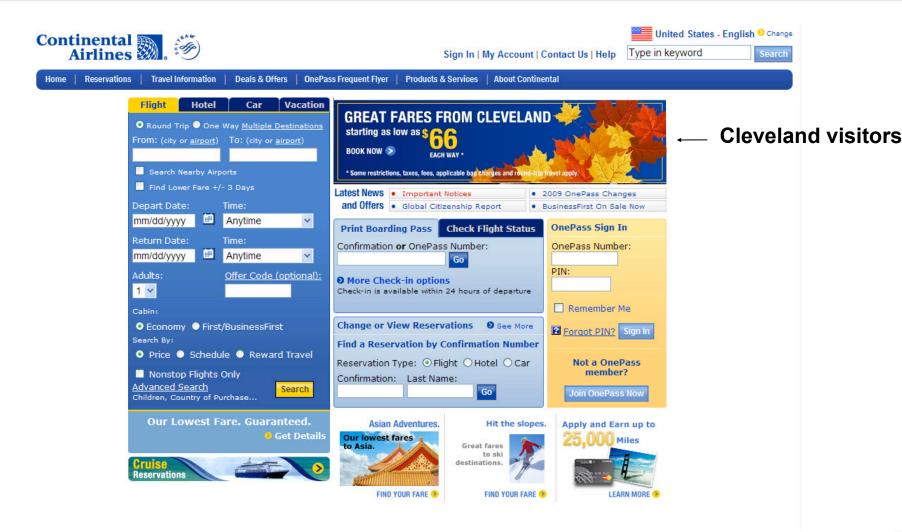
- The process of automatically identifying a Web user's physical location, from their IP address, without that user having to provide any information, such as a ZIP code
 - Down to a country, state or even city 20-50 mile radius
 - In real-time
 - Works on all web browsers
 - Non-invasive no cookies or privacy issues

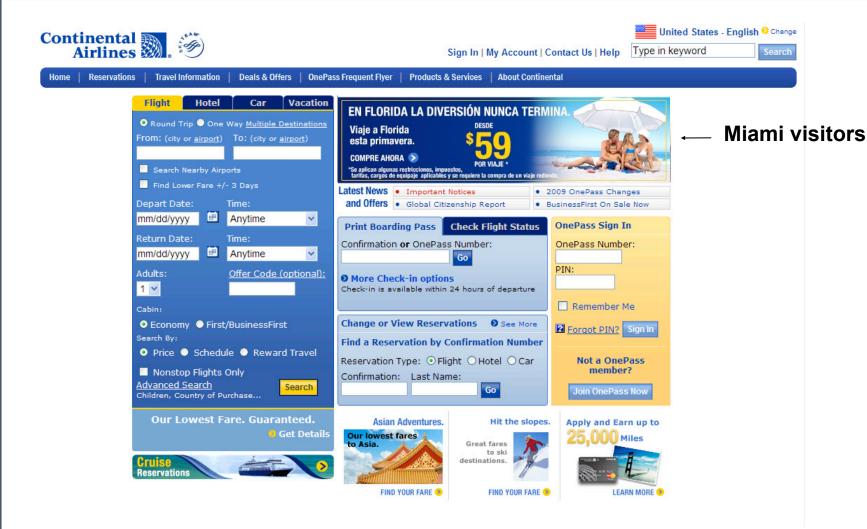


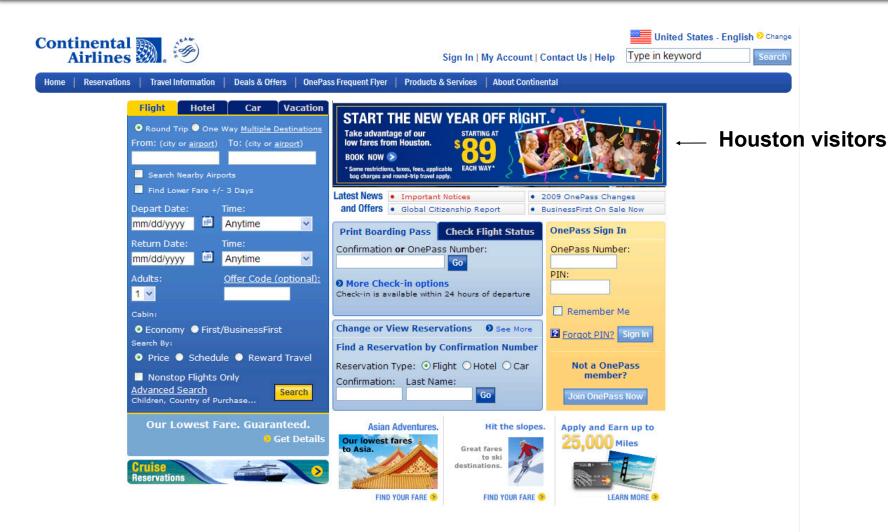






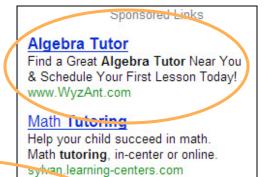


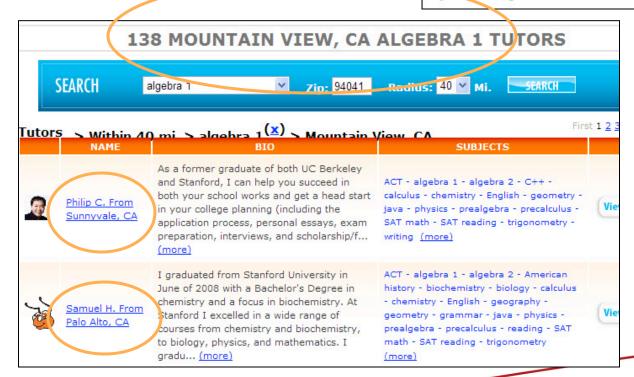




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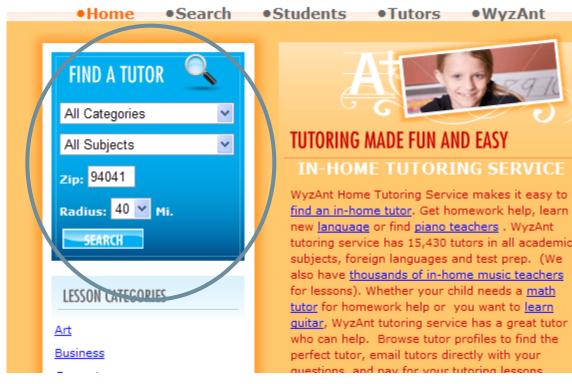
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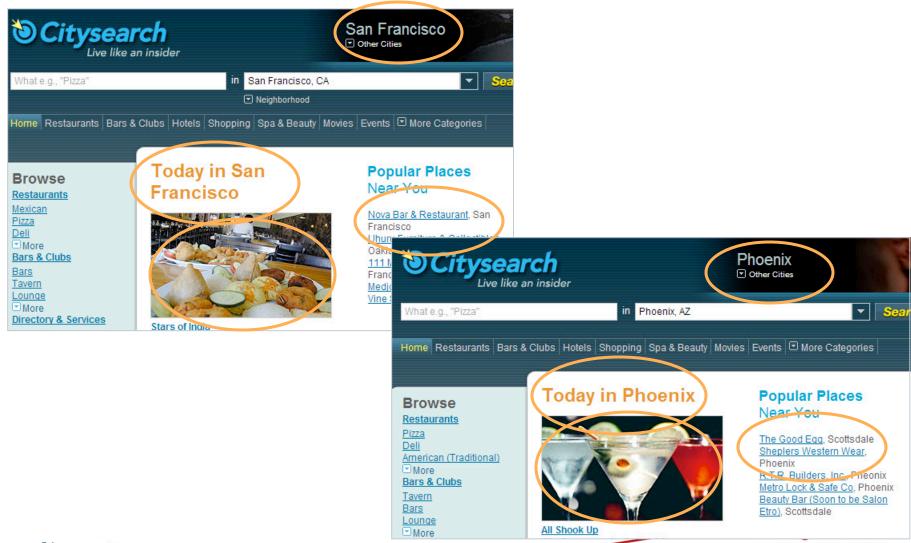
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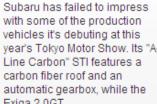


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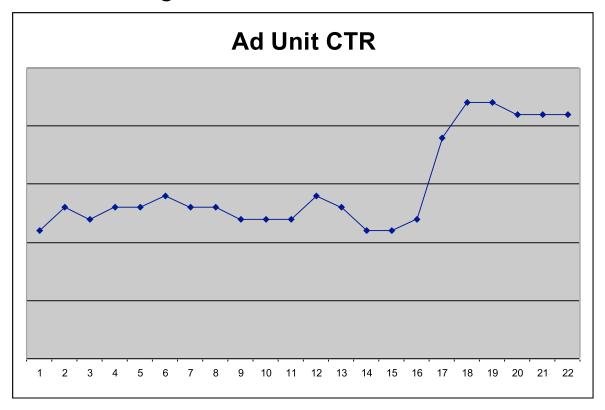


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- Show your visitors the nearest store, agent, or service center
- Present prices in Euros instead of US dollars
- Show products relevant to visitor's location (summer vs. winter)
- Automatically re-direct international traffic to a translated site
- Offer online coupons for your local offline stores
- Show visitors the local news, weather, events
- Restrict access to digital content to comply with license and copyright agreements
- Push merchandise to visitors in areas where stores have excess inventory
- Change banner ads to offer geographicrelated promotions, i.e. flights from Chicago

- Ensure visitors in embargoed areas are restricted from accessing certain products
- Comply with FDA regulations by controlling access to drug marketing information
- Show only the brands you can legally promote and market in each country
- Automatically direct traffic to local store location
- Promote local store sales and events to drive traffic
- Analyze campaign results by tracking online activity in launch cities
- Serve rich media ads to users with high-speed connections
- Test products on a market-by-market basis
- Build geographic communities using social media
- Analyze your Web traffic in real-time and make instant changes to campaigns



Advertising Value Chain

Continent europe Country: sk (Country: sk (C

Figure 1. Sample Online Advertising Value Chain

