RESO | Internet Tracking

Internet Tracking data is a key component for any modern day data set.

No longer is having the data secure and readily available enough.

True statistics and analytics that show overall activity and underlying value are now expected and commonplace in the software industry.

Internet Tracking

Recording End-User Events
Object Oriented Fields
Activity Streams & RESO Community
CopyCat
Live in Data Dictionary 1.6

Privacy Concerns
MUST Be Aware of Privacy Issues in the Decision Making Process
MUST Be Informed on Current Events Related to End-User Privacy
SHALL Advocate Best Practices to the RESO Community In Regards to End-User Privacy

Data Transfer
RESO Web API
Must Be Flexible For All Parties

Summary Reports
Required Reporting
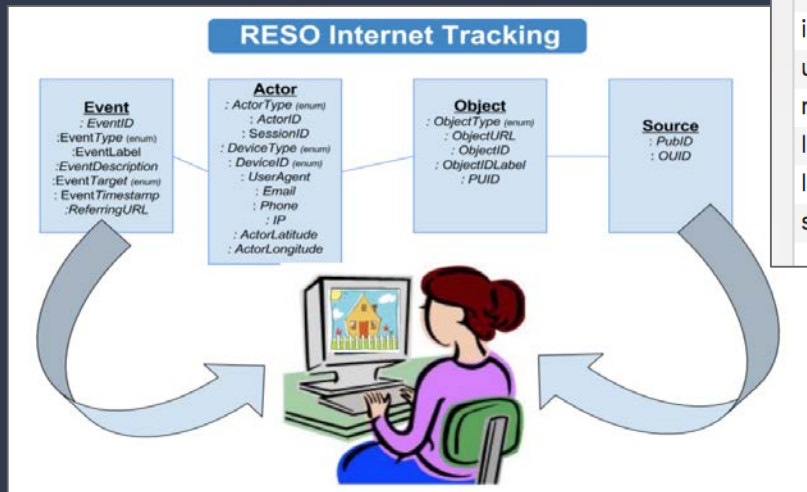Lo-fi / Affective Data Merge

Internet Tracking

An Object Oriented Solution

- 49 Fields
- 68 Enumerations
- 21 Events
- 7 Objects

Internet Tracking
RESO Web API/OData Examples
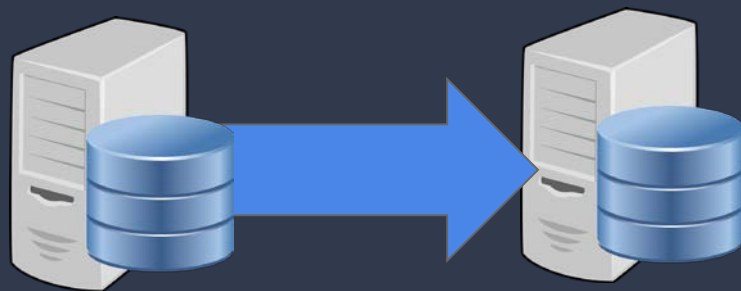
Detailed Views in the current year
RESO/OData/InternetTracking/?$filter=(EventType eq 'Detailed View' and Year(EventTimestamp) = 2017)

Detailed Views in the current year for one specific listing
RESO/OData/InternetTracking/?$filter=(EventType eq 'Detailed View' and Year(EventTimestamp) = 2017 and ObjectID='08123456')

Lead form submissions in the current year
RESO/OData/InternetTracking/?$filter=EventType/any(a: a eq 'Submission of Lead Form') and Year(EventTimestamp) = 2017

Privacy
As a Liability

29,000+ Data Points on Each User

Privacy

Government Regulations

Privacy

Disrupting The Industry

- End-User Controlled Data Transfers
- Uses Existing Open Source Tech
- A Non-Blockchain Solution

Privacy

Disrupting The Industry

UPDATE App Store Privacy Policy

Dev Privacy policies **must** include:

- **clear** information about what data are collected
- **how** the data are **collected**
- **how** the data is **stored**
- what is **done** with the data' and how users can **revoke** their consent and **demand** that their data be **deleted**

Privacy

Disrupting The Industry

Roomba's Next Big Step Is Selling Maps of Your Home to the Highest Bidder

Rhett Jones
7/24/17 2:05pm · Filed to: INTERNET OF THINGS ⌄

369.7K   203   7

Privacy

Double-Take

Leo Triplett

Chief Information Officer at Metro MLS

Metro Mls

Connect

Summary Reports

Leading By Example

Nutrition Facts

Serving Size 2/3 cup (55g)
Servings Per Container About 8

Amount Per Serving

Calories 230	Calories from Fat 72

% Daily Value*

Total Fat 8g	**12%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 160mg	**7%**
Total Carbohydrate 37g	**12%**
Dietary Fiber 4g	**16%**
Sugars 1g	
Protein 3g	

Vitamin A	10%
Vitamin C	8%
Calcium	20%
Iron	45%

* Percent Daily Values are based on a 2,000 calorie diet.
Your daily value may be higher or lower depending on
your calorie needs.

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Nutrition Facts

8 servings per container
Serving size   2/3 cup (55g)

Amount per serving
Calories   **230**

% Daily Value*

Total Fat 8g	**10%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 160mg	**7%**
Total Carbohydrate 37g	**13%**
Dietary Fiber 4g	**14%**
Total Sugars 12g	
Includes 10g Added Sugars	**20%**
Protein 3g	

Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%

* The % Daily Value (DV) tells you how much a nutrient in
a serving of food contributes to a daily diet. 2,000 calories
a day is used for general nutrition advice.

Internet Tracking

RESO

Listings
Total views 1,803
Total favorited 802
Total shared 233
Total emailed 421

System
Total logins 10,221
Total mobile 3,222

Summary Reports

Meet The Buckets

Internet Tracking

Listings
Total views 1,803
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System
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Total mobile 3,222

Internet Tracking

CMA/Reports
Total CMA/Reports Created 1,803
Total CMA/Reports Ran 802
Total CMA/Reports Shared 233
Total CMA/Reports Email 421

System
Total logins 10,221
Total mobile 3,222

Internet Tracking

Showing Tech
Total Showings Requested 1,803
Total Showings Completed 802

System
Total logins 10,221
Total mobile 3,222

RESO | Internet Tracking

What Have You Done For Me Lately….

- ✅ Actor Fields for Fingerprint

- ✅ Collections Data for Multiple Results in One Record

- ✅ New EventTypes including Search, Modify and Exit

- ✅ PUID Support

RESO | Internet Tracking

NEW

Tracking Class	Field Name	Description	Simple Data Type
Actor	ScreenWidth	The screenwidth, in pixels, of the Actor's device	Number
Actor	ScreenHeight	The screenheight, in pixels, of the Actor's device	Number
Actor	ColorDepth	The colordepth of the Actor's device display	Number
Actor	TimeZoneOffset	The timezone offset is the difference, in minutes, between UTC and local time.	Number
Actor	PluginList	A list of plugins listed in the Actor's browser	Collection
Object	ObjectCollection	A dataset that includes more than one identifiable object. For example - all the listing ID's that were the result of a search.	Collection

RESO | Internet Tracking

Lookup	Enumeration	Description
EventType	Exit Detailed View	The actor left the detailed view
EventType	Object Modified	The tracking Obect was modified in some way.
EventType	Search	The tracking Object is data is part of a search and will contain more than one result. Normally, the search result data will be presented in the ObjectCollection field and include ALL the listings that were part of the search.
ObjectType	Photo	The Object of the tracking event is a Photo.
ObjectType	Document	The Object of the tracking event is a Document.
ObjectType	Virtual Tour	The Object of the tracking event is considered a Virtual Tour.

RESO | Internet Tracking

NEW

ObjectIDType	PUID	When no listing exists and the tracking property centric, the RESO PUID is being used.	
ObjectIDType	ListingKey	The ObjectID is a key field from an MLS system.	
ObjectIDType	ListingKeyNumeric	The ObjectID is a numeric key field from an MLS system.	
ObjectIDType	OpenHouseKeyNumeric	The ObjectID is the key of an Open House record.	
ObjectIDType	OpenHouseKey	The ObjectID is the numeric only key of an Open House record.	
ObjectIDType	SavedSearchKeyNumeric	When the event is the execution of a saved search, the ObjectID will be the SavedSearchKey or SavedSearchKeyNumeric from the system that executed the search. Individual listings from the result set or being viewed would be separate events for each record.	

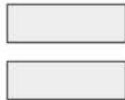# Fingerprint

Actor.UserAgent ✚ Actor.ScreenWidth ✚ Actor.ScreenHeight ✚

Actor.ColorDepth ✚ Actor.TimezoneOffset ✚ Actor.PluginList

Collections

Listing #	Grouped #	DOM	ListPrice	SoldPrice
0U812	-	100	$330,500	$320,000
AC046	1,433	30	$350,000	$340,000
5Y692	1,233	53	$375,000	$350,000

```
{
    "EventType" : "Search", "EventDescription" : "Search for RE Listings", "EventTimestamp" : "2018-02-14T17:38:38+00:00",
    "ActorType" : "Consumer", "ObjectType" : "Listing", "ObjectID" : "",
    "ObjectCollection" : [
        { "listingID" : "56786" },{ "listingID" : "54465" }, {"listingID" : "58876" },
        {"listingID" : "57789" }, { "listingID" : "50598" }, { "listingID" : "51512" },
        {"listingID" : "52525" }, { "listingID" : "56565" },{"listingID" : "54321"},
        {"listingID" : "57890" }, { "listingID" : "57589" }, {"listingID" : "52521" }
    ]
}
```

Agenda
10/17/2018

- ✅ **Summary Reports**
  - ✅ BLANK vs 0 vs N/A? OR Self-regulation?

- ✅ **Implementation**
  - ✅ What's the bottleneck? Too Complicated? Transport? Cost?
  - ✅ White paper solution, Webinar, 101 Discussions

- ✅ **Standard Tracking Pixel**
  - ✅ Can we define a standard tracking method?

- ✅ **Blockchain Ledger**
  - ✅ Can we define the playground for this future tech in tracking? Transparent, Secure = Privacy

- ✅ **Direction From the Floor…**

Agenda
10/17/2018
Summary Reports

✅ **Summary Reports**

✅ BLANK vs 0 vs N/A? OR Self-regulation?

-Overview
The workgroup has approved to break down Real Estate products into **category buckets** by type of service and the first set of analytics for each.

-Vision
The **Summary Report** would serve to solve the following needs:
- A consistent way for organizations to compare tracking in RE products by category
- A best practice for insight on tracking data
- A way to promote RESO and the value of industry standards

-Playground
The **Summary Report** would need to follow these playground rules:
- Be flexible enough to cover various Real Estate products and platforms
- Be concise and not bloated with overwhelming information
- Allow for products to provide analytics in more than one category

Internet Tracking
✖ RESO

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Agenda
10/17/2018
Implementation

✅ Implementation
- ✅ What's the bottleneck? Too Complicated? Transport? Cost?
- ✅ White paper solution, Webinar, 101 Discussions

Implementation of the Internet Tracking solution has not been linear.
Why? What's the bottleneck?

Too Complicated?

Transport?

Cost?

There isn't a high demand for the transfer of this information?

????

Agenda
10/17/2018
Implementation

✅ Implementation
- ✅ What's the bottleneck? Too Complicated? Transport? Cost?
- ✅ White paper solution, Webinar, 101 Discussions

The group has decided to conduct a group effort in the creation of white papers that better define the Internet Tracking solution and the ROI of analytics in the real estate industry.

Call for White Paper topics.

ROI of Analytics in the REal world?

Deep-dive in Internet Tracking?

????

Agenda
10/17/2018
Tracking Pixel

Standard Tracking Pixel
- Can we define a standard tracking method?

Can/should we define a RESO standard method for tracking end user activity?

Can/should we create the RESO pixel?

What about a tracking cookie standard?

Anyone want to lead the charge - conduct research and report back to the group? Sub-committee?

For reference : https://en.ryte.com/wiki/Tracking_Pixel

TRACKING PIXEL   OnP

A tracking pixel (also called 1x1 pixel or pixel tag) is a graphic that is loaded when a user visits a website or opens an email and is used to track certain user activities. A tracking pixel can also be used to acquire statistical data for online marketing, web analytics, or email marketing.

The Pixel

facebook

Important Facebook Pixel Update

Hi Chris,

On October 24, Facebook will begin offering businesses a first-party cookie option with the Facebook pixel. This change is in line with updates made by other online platforms, as use of first-party cookies for ads and site analytics is becoming the preferred approach by some browsers.

Businesses have long relied on cookies to serve ads to relevant audiences and understand visits to their sites. Up until now, Facebook has used its pixel — powered by third-party cookies — for website analytics, ad targeting, and ad measurement. This new option will also help advertisers, publishers, and developers continue to get accurate analytics about traffic to their websites.

Businesses can opt out of first-party cookies by updating their pixel settings in Events Manager.

The controls people have over ads on Facebook in Ads Preferences will not change. Our Business Tools Terms also still require businesses to clearly disclose how they use cookies and share data collected on their sites with third parties, so we recommend businesses review their cookie-related disclosures. To learn more about this update, visit the Help Center.

Agenda
10/17/2018

Blockchain Ledger

Can we define the playground for this future tech in tracking? Transparent, Secure = Privacy

Blockchains are essentially databases with some inbuilt pre-agreed technical and business logic criteria, kept in sync via peer-to-peer mechanisms and pre-agreed rules about what new data can be added.

With respect to immutability, there are two key ideas that help to make tampering easy to detect: hashes and blocks.

Transparent data is good for privacy.

Secure data is good for privacy.

Immutable solution may hinder privacy trends (transfer and removal of records)

Agenda
10/17/2018

✅ Direction From the Floor…

Thank You Workgroup Members!!!

Chris Lambrou

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@techBrou