



Schema.org Actions

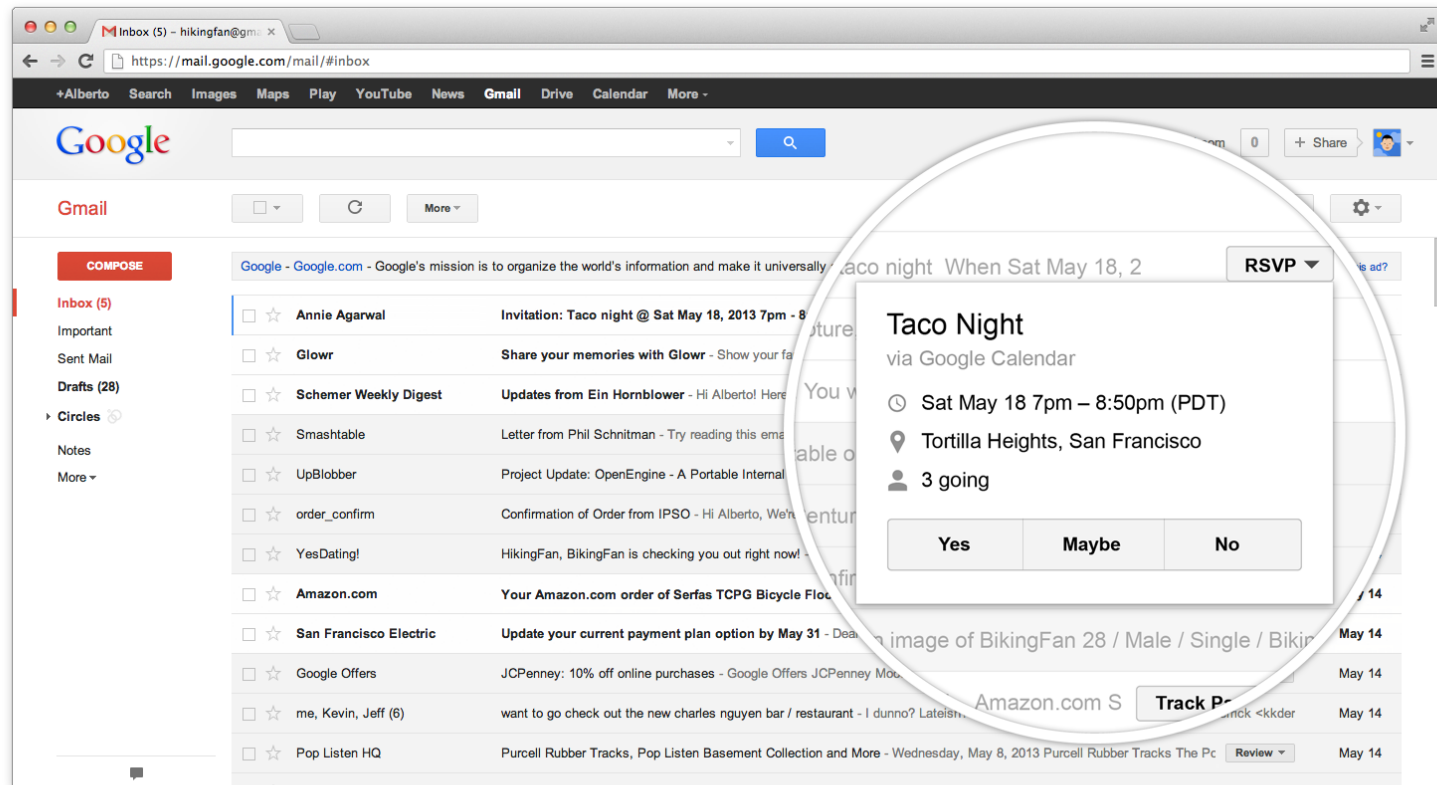
A taxonomy of verbs

goto@google.com

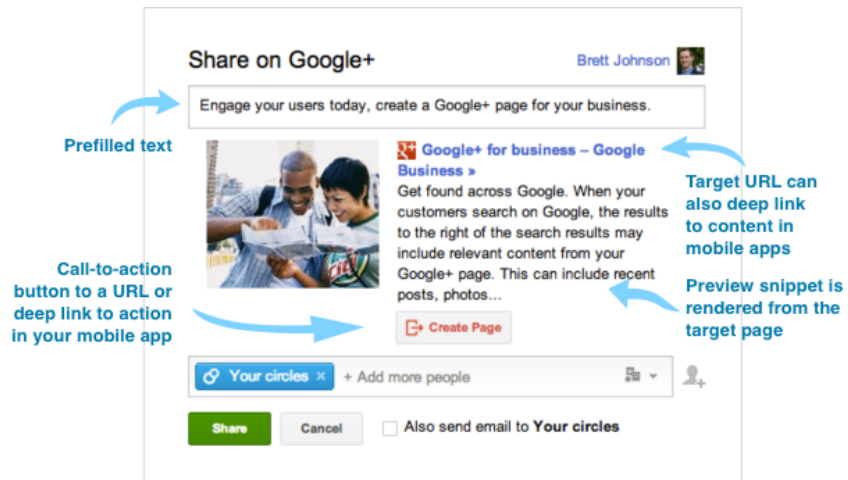
Requirements

- model past, present and future activities
- model discovery and execution of activities

Use cases: Gmail



Use cases: Google+



Use cases: Search

[Web](#)
[Images](#)
[Maps](#)
[Shopping](#)
[More ▾](#)
[Search tools](#)

10 personal results. 89,300,000 other results.

Hotel reservations
Only you can see this result

From Fairfield Inn

Fairfield Inn Atlantic City North

Check in on May 15, 2013

Check in
Wednesday, May 15, 2013

Check out
Thursday, May 16, 2013

Location
405 East Absecon Boulevard
Absecon, NJ 08201
United States
[Get directions](#)

[View email for this reservation](#)

[Give feedback](#)



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Businesswomen: Work to be done by TheEconomist
200,797 listeners

TechCrunch Disrupt Track #12 Modern Trance by T
5,048 listeners

All rounders by The Football Ramble
633 listeners



The New Digital Age by Eric Schmidt and Jarr
347 listeners

[Get swept away](#)

Use case: Now

Virgin America

flight 25


Status: Delayed / Mon, 29 Oct 2012


Depart New York

JFK 12:30 PM (12:00 PM)
Terminal 2, Gate 54B

Arrive San Francisco


SFO 1:56 PM (1:31 PM)
Terminal 4

 [Navigate to JFK / 32 min](#)


 [View email](#)


Le Gavroche


43 Upper Brook Street, London, W1K 7QR



Reservation in 1 hour
Journey time walking 45 minutes



 [Get directions](#)

 [View email](#)

Design

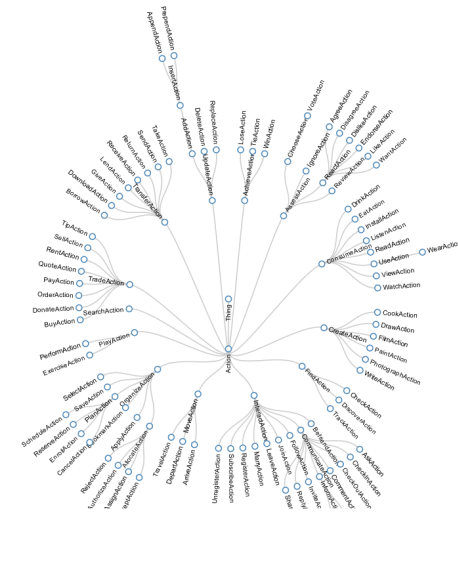
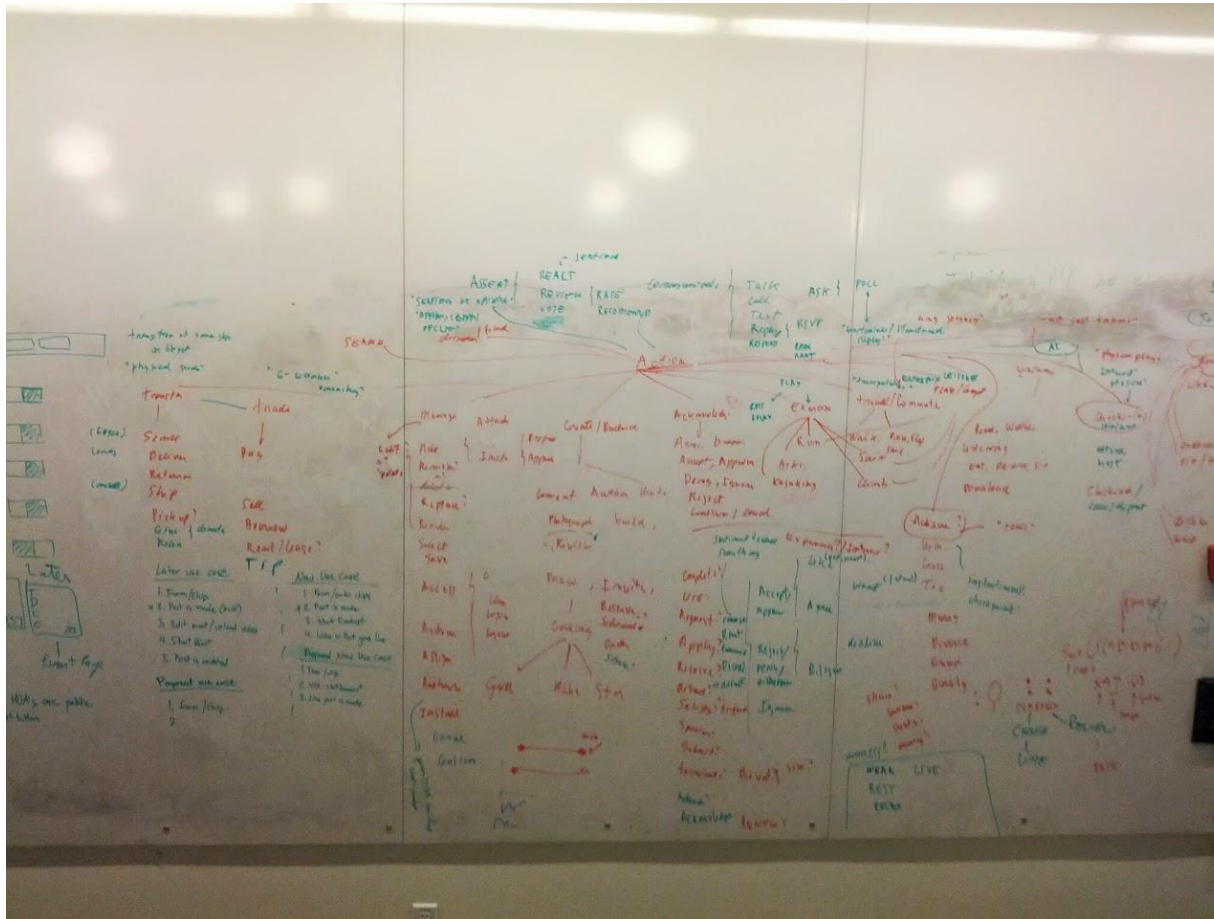
Goals

- **Rich set of nouns:** how do you describe a Hotel?
- **Disambiguation:** what does it mean to receive a gift? is the gift mine now?
- **Structure for Synonyms:** what's the difference between writing and creating?
- **Contextual Arguments:** what arguments does buying have?
- **Execution and Handling:** how can actions be fulfilled?
- **Structured Composition:** can the result of an action serve as an argument of another?

Principles

- Verbs are top level types
- Verb arguments refer to semantic roles
- Hierarchy specialization
- Allow Reciprocals
- Allow Antonyms

Implementation



Thing > Action > UpdateAction > AddAction > InsertAction > AppendAction

The act of inserting at the end if an ordered collection.

Property	Expected Type	Description
Properties from <u>Thing</u>		
additionalType	<u>URL</u>	An additional type for the item, typically used for adding more specific types from external vocabularies in microdata syntax. This is a relationship between something and a class that the thing is in. In RDFa syntax, it is better to use the native RDFa syntax - the 'typeof' attribute - for multiple types. Schema.org tools may have only weaker understanding of extra types, in particular those defined externally.
url	<u>URL</u>	URL of the item.
description	<u>Text</u>	A short description of the item.
image	<u>URL</u>	URL of an image of the item.
name	<u>Text</u>	The name of the item.
Properties from <u>Action</u>		
agent	<u>Person</u> or <u>Organization</u>	The direct performer or driver of the action (animate or inanimate). e.g. <i>*John*</i> wrote a book.
participant	<u>Person</u> or <u>Organization</u>	Other co-agents that participated in the action indirectly. e.g. John wrote a book with <i>*Steve*</i> .
object	<u>Thing</u>	The object upon the action is carried out, whose state is kept intact or changed. Also known as the semantic roles patient, affected or undergoer (which change their state) or theme (which doesn't). e.g. John read <i>*a book*</i> .
result	<u>Thing</u>	The result produced in the action. e.g. John wrote <i>*a book*</i> .
location	<u>Place</u> or <u>PostalAddress</u>	The location where the action occurred. e.g. John wrote a book at <i>*his house*</i> .
instrument	<u>Thing</u>	The object that helped the agent perform the action. e.g. John wrote a book with <i>*a pen*</i> .
startTime	<u>DateTime</u>	When the Action was performed: start time. This is for actions that span a period of time. e.g. John wrote a book from <i>*January*</i> to December.
endTime	<u>DateTime</u>	When the Action was performed: end time. This is for actions that span a period of time. e.g. John wrote a book from January to <i>*December*</i> .
Properties from <u>UpdateAction</u>		
collection	<u>Thing</u>	A sub property of <u>object</u> . The collection target of the action.
Properties from <u>AddAction</u>		
Properties from <u>InsertAction</u>		
toLocation	<u>Place</u> or <u>Number</u>	A sub property of <u>location</u> . The final location of the object or the agent after the action.
Properties from <u>AppendAction</u>		

Example #1: John bought a book using amazon.com.

```
// John bought a book using amazon.com
```

```
<script type="application/ld+json">
```

```
{  
  "@context": "http://schema.org",  
  "@type": "BuyAction",  
  "agent": {  
    "@type": "Person",  
    "name": "John"  
  },  
  "object": {  
    "@type": "Book",  
    "name": "Outliers"  
  },  
  "instrument": {  
    "@type": "Product",  
    "name": "Amazon"  
  }  
}
```

```
</script>
```

Example #2: Action handling

```
// Confirms a table reservation.  
<script type="application/ld+json">  
{  
  "@context": "http://schema.org",  
  "@type": "ConfirmAction",  
  "object": {  
    "@type": "Reservation",  
    "name": "Bar Tartine"  
  },  
  "handler": {  
    "@type": "HttpActionHandler",  
    "url": "http://opentable.com/1234"  
  }  
}  
</script>
```

```
<!-- Buys products -->  
<form itemscope itemtype="http://schema.org/BuyAction">  
  <input type="text" itemprop="object"> </input>  
</form>
```

Questions?

goto@google.com

<http://lists.w3.org/Archives/Public/public-vocabs/>

<http://sdo-actions.appspot.com/Action>