OpenTrip: An Open Protocol for the Interchange of Travel Information Among Rideshare Providers
(and other services…)

Carl Gorringe

511.org Rideshare
gotalift.com

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Rideshare services today

A multitude of rideshare providers, each one on their own separate island…
Rideshare services tomorrow

Let’s build some bridges!
Nice in theory but…

- Why should one service share its data with its competitor?

- Is there a good business case?

- Will this help solve, or at least get us closer to solving, the “critical mass” problem?
What Data?

There are 2 basic pieces of data required for a ride match:
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1. Location & Time of Trip
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1. Location & Time of Trip

2. Means of Contacting Users
What Data?

- Both pieces are required or else a ride match won’t work.
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- A ridesharing service could share just one of the two pieces of data: The location and time of the trip.
- A competing service could then match riders with drivers, but would have to direct the user to the originating service to obtain the contact information.
If a user visits C, they’ll have only 5,000 trips to search against. If they don’t find a match, they aren’t as likely to return. Thus the “Critical Mass” problem.
But if everyone shares a data feed with everyone else, then anywhere a user searches will have 36,000 trips to search against, thus increasing the odds of finding a match and the user returning to the website.
OpenTrip

- First discussed at TransitCamp Bay Area in Palo Alto, California, Feb 23-24, 2008. (we called it “TripML”.)
- A Google Group was created to continue the discussion.
- Further discussion at TransitCamp 2 in September.
- I began inviting more people to the list last Dec – Jan.
How has the collaboration worked so far?

- Well… It’s been a little slow moving.
- What can we do to get more participation from the major service providers?
- Is there something wrong with the medium being used?
- Are people just too busy?
- Are there other factors keeping people from participating online? (Lawyers, for example)
- *Please help me with this!*
The Big Picture
Potential Generators and Consumers of OpenTrip

- Social ridesharing services
- Car sharing
- Travel sites
- Taxi companies
- Air Taxi operators and brokers
- Travel planning kiosks
- Calendar software
- Event sites
- Any sort of trip planner
- Any sort of research project into travel patterns
- Travel sites
- Location and Visitor Bureau sites
- Transit Agencies
- FAA, DOT, State and County Transportation Agencies
Basic Principles

- Open Standards, anyone may use.
- Openly Published.
- Distributed Architecture.
  - Avoid centralized databases and points of failure!
- Extensible for future needs.
Layers of OpenTrip

• OpenTrip Core
  • Defines the data structures for our trip data.
  • Simple mechanism of publishing as an Atom/RSS feed, useful for traditional rideshare websites.

• OpenTrip Dynamic API
  • Suited for dynamic ridesharing.
  • Real time updates, resource allocation, and messaging.
Layers of OpenTrip (cont.)

- **OpenTrip Ping**
  - Simple mechanism to inform a feed consumer that there is an update to the feed.

- **OpenTrip Search**
  - Uses OpenSearch to return a feed of ride matches from participating websites.

- **Resource Discovery Process**
  - How to find out what services are offered on individual servers, and a registry of all servers.
OpenTrip Core:  
Minimum requirements in a data feed

1. Origin & Destination Locations, preferably as Lat / Lon coordinates.
2. Date & Time of ride, one-time or recurring.
3. User Preference: Drive, Ride, or Both.
4. A unique *Trip ID* or *Event ID*.
5. Expiration date.
OpenTrip Core:
Minimum requirements in a data feed (cont.)

6. One of either of these:
   i. For websites, a URL pointing to detailed information on source website, which would include a means to contact carpooler.
OpenTrip Core:
Minimum requirements in a data feed (cont.)

6. One of either of these:
   i. For websites, a URL pointing to detailed information on source website, which would include a means to contact carpooler.
   ii. For dynamic rides, a *Contact ID* or *User ID*, which may be used to contact the carpooler in real-time through the use of an API on the source’s server.
What has been done so far…

- 1\textsuperscript{st} Draft of OpenTrip Core posted at: http://www.opentrip.info

- Feed Consumer & Search Engine will be up and running soon at 511.org

- We’re ready and willing to accept others data feeds!
An Example Feed:  (looks better on the website, trust me)

<?xml version="1.0" encoding="utf-8"?>
<feed xmlns="http://www.w3.org/2005/Atom" xmlns:g="http://www.georss.org/georss" xmlns:t="http://opentrip.info/-/opentrip/0.1/">
    <title>Example Feed</title>
    <link rel="self" href="http://example.com/feeds/foobar.xml"/>
    <id>urn:guid:example.com:ABCDEFG</id>
    <updated>2009-01-01T01:23:45Z</updated>
    <author><name></name></author>
    <entry>
        <title>I need a ride</title>
        <link href="http://example.com/postings/123456789.html"/>
        <id>urn:guid:example.com:123456789</id>
        <published>2009-01-01T01:23:45Z</published>
        <updated>2009-01-01T01:23:45Z</updated>
        <t:expires>2009-09-01T01:23:45Z</t:expires>
        <content>I'm looking for a ride to work and back home during the week.</content>
        <t:location label="Home">
            <t:town>Oakland</t:town>
            <t:region>CA</t:region>
            <t:country>US</t:country>
            <g:point>37.774311 -122.214746</g:point>
        </t:location>
        <t:location label="Work">
            <t:town>San Francisco</t:town>
            <t:region>CA</t:region>
            <t:country>US</t:country>
            <g:point>37.779806 -122.419925</g:point>
        </t:location>
        <author>
            <name>John Doe</name>
            <email>john@example.com</email>
            <uri>http://example.com/profile123.html</uri>
            <t:phone label="mobile">510-555-1234</t:phone>
            <t:age>25</t:age>
            <t:gender>male</t:gender>
        </author>
        <t:prefs>
            <t:drive/>
            <t:nonsmoking/>
        </t:prefs>
        <t:mode kind="auto">
            <t:cost kind="USD">2.00</t:cost>
            <t:capacity>2</t:capacity>
            <t:vacancy>1</t:vacancy>
            <t:make>Tesla</t:make>
            <t:model>Roadster</t:model>
            <t:year>2009</t:year>
            <t:color>Red</t:color>
            <t:lic>ABCD123</t:lic>
        </t:mode>
    </entry>
</feed>
Next Steps

Let’s:

- Commit to continuing the discussion online, in whatever form we agree on.
- Make whatever changes necessary, then finalize a stable OpenTrip Core version 1.0.
- Create some data feeds!
- Continue working on the Dynamic Ridesharing API.
Thank You

Carl Gorringe
511.org Rideshare
carl@gotalift.com