Pinning Down Abuse on Google Maps

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Google
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Maps SEO is based on physical proximity

**Traditional SEO**
- Ranked by relevance
  - Example: pharma

**Maps SEO**
- Ranked by proximity
  - Example: locksmiths

How many and where?
How to make money?
How to evade detection?
Impact on users?
7 locksmiths near me

Pro Locksmith San Diego
Locksmith · 2.5 mi

Pro Locksmith San Diego

$15 for $30

Add a Photo
Photos on Yelp

+1 (619) 892-7269

yourprolocksmith.com

7770 Regents Rd
Unit 113
San Diego, CA 92122
United States
“Locksmith” located at UPS Store
Fake locksmiths are an old problem

The New York Times

Fake Online Locksmiths May Be Out to Pick Your Pocket, Too

False sense of proximity
Monetize from inferior service
Overview of abuse on Google Maps

Violation of ToS
Caused harm to users
Overview of abuse on Google Maps

Abusive listings 2014 - 2015

- 15% reached users

Fake Locations (40%)
- locksmiths, plumbers, garage door openers

Affiliate Fraud (13%)
- hotels, restaurants

Misc (47%)
Affiliate fraudsters hijack hotel listings

Paying for referral traffic
Damage to branding

Reputable travel agency
Abuse varies across countries

- USA:
  - Locksmiths: 0%
  - Plumbers, etc: 0%
  - Hotels: 80%

- India:
  - Locksmiths: 20%
  - Plumbers, etc: 40%
  - Hotels: 80%

% of abusive listings in each country
How did scammers evade Google’s detection?
Creating a free listing on Google Maps
80% abusive listings verified through mail
Creating listings by buying fake locations

Residential

Commercial
Verifying listings using the same address

123 Main St

123 Main St Suite 456
123 Main St #456
#456 123 Main St

Impose a cutoff?

Verify multiple listings

25% of abusive listings used this trick
Abusive listings verified at the same address

# Listings at same address

- >1,000
- 101 - 1,000
- 11 - 100
- 2 - 10
- 1

Probability of abusive listings

E.g. legit doctor listings at hospital
Impact on end users?
Quantifying impact on users

* 11% of local search results for locksmiths in the US were abusive during our analysis period.
84% of search results for locksmiths in West Harrison, NY were abusive during our analysis period.
* For every 100 random abusive search results in the US, 2 were abusive locksmiths, while 47 were abusive restaurants.
Overall search results that are abusive

<table>
<thead>
<tr>
<th>Service</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locksmiths</td>
<td>11%</td>
</tr>
<tr>
<td>Plumbers, etc</td>
<td>0.4%</td>
</tr>
<tr>
<td>Restaurants</td>
<td>1%</td>
</tr>
<tr>
<td>Hotels</td>
<td>1%</td>
</tr>
</tbody>
</table>

0.5% of search results in US were abusive*

* Out of 1000 random search results in the US, only 5 were abusive results during our analysis period.
Summary

SEO based on physical proximity

Fake locations vs affiliate fraud

Hard to verify addresses at scale

Improved defenses by Google; abusive listings down by 70% from peak
Thank you!

More info: http://sysnet.ucsd.edu/~dhuang/

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