Asking Questions of Targeted Strangers on Social Networks

Jeffrey Nichols and Jeon-Hyung Kang
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jwnichols@us.ibm.com
Asking questions on social media...

What’s a good digital camera?
Can we leverage the large amount of data created by public social networks?
Example

jeffbigham Jeffrey P. Bigham

another great crowdsourcing talk -- by steven
dow, on shepherding the crowd (helping them get
better) :: cs.cmu.edu/~spdow/files/C...
#cscw2012
11 minutes ago

jwnichls Jeffrey Nichols

@jeffbigham Are you still in Grand J? How full is it
over there?
2 minutes ago

in reply to ↑

@jeffbigham Jeffrey P. Bigham

@jwnichls pretty crowded
... leaving after this talk to see what
i'm told will be a great one in
Grand K next

1 minute ago via web

🌟 Favorite ⇨ Retweet ↩ Reply
Where might this be helpful?

• Questions about an event that are best answered soon after the event

• Questions for which there might be a diversity of opinion

• More?
How feasible is this approach?

• Will people answer questions from strangers?
• Will use of an incentive increase responses?
• What is the quality of the answers?
In this paper:

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- Will people answer questions from strangers?
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- What is the quality of the answers?
Question Asking Prototypes

Two scenarios:

**TSA Tracker**
- Crowdsourcing airport security wait times
- Identify people at airports and ask their approximate wait time
- Only ask people who reveal specific airport (don’t ask for location)

**Product Reviews**
- Identify owners of products and ask specific questions
- Digital cameras, tablets, food trucks
- Output is user-generated *structured* product information
Concrete Prototype: TSA Tracker

Crowdsourcing airport security wait times through Twitter

Step #1. Watch for people tweeting about being in airport

Step #2. Ask nicely if they would share wait time to help others

Step #3. Collect responses and share relevant data on web site

Step #4. Say thank you!

Key Question:
Will people respond to questions from strangers?

http://tsatracker.org/
@tsatracker, @tsatracking
Questions

From @tsatracker (includes incentive)

“If you went through security at <airport code>, can you reply with your wait time? Info will be used to help other travelers”

From @tsatracking (no incentive)

“If you went through security at <airport code>, can you reply with your wait time?”
Concrete Prototype: Product Reviews

Step 1. Identify owners of a product

Step 2. Ask focused question about product

- How is the image quality?
- Does it take good low light pictures?
- How quickly does it take a picture after pressing the shutter button?
- How durable is it?
- What accessories are must have?
- Etc...

Step 3-4. Ask more questions if user responds

Step 5. Visualize results as structured product review (future work)

Key Questions:

Will people respond to questions in this different domain?
Will people respond to follow-up questions at the same rate?
Question Asking Dashboard (TSA Tracker)

4sq-only stream

High-rate (less filtered) stream

User's recent tweets

Responses
Results...
Suspended!

• @tsatracking account (no incentive condition) given 1 week suspension after asking 150 questions

• Did not violate Twitter Terms of Use

• Exceeded threshold for blocks or message marked as spam

• Neither of our other accounts were suspended
Results

Key Question: Will people respond to questions from strangers?

Answer: 42% response rate
44% of answers received in 30 mins

No significant difference between any conditions (taking into account suspension)
# Follow-up Question Results

<table>
<thead>
<tr>
<th></th>
<th>Asked</th>
<th>Responses</th>
<th>Response Rate</th>
<th>Median Response Time (minutes)</th>
<th>% Responses Within 30 minutes</th>
<th>95% Responses Received In (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st follow-up</td>
<td>245</td>
<td>151</td>
<td>62%</td>
<td>18.5</td>
<td>58%</td>
<td>17.5</td>
</tr>
<tr>
<td>2nd follow-up</td>
<td>61</td>
<td>55</td>
<td>90%</td>
<td>2</td>
<td>84%</td>
<td>11.2</td>
</tr>
<tr>
<td>3rd follow-up</td>
<td>24</td>
<td>23</td>
<td>96%</td>
<td>6</td>
<td>78%</td>
<td>2.0</td>
</tr>
</tbody>
</table>

- Significant differences between all 4 questions \((H=50.12, \, df=3, \, p < 0.0001, \text{Kruskal-Wallis})\) and just the 3 follow-ups \((H=25.46, \, df=2, \, p < 0.0001, \text{Kruskal-Wallis})\)
Qualitative Results

• @tsatracker account picked up 16 followers

• Many positive responses (“this will be great for travelers”)

• Only one slightly negative response (“this is creepy”), but that person also gave an answer
What’s next?

- Feasibility in other domains?
- Quality of answers?
- Can we infer who will answer and who will not?
- Can we build a tool to support this process?
- What will be the impact of this approach on social networks?
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For more information please contact:
Jeffrey Nichols
jwnichols@us.ibm.com
The Information Iceberg

Information revealed through status updates

Useful information known to members of social network

This information can be leveraged to improve services, find new business, etc.
Example #1:
Learning more about customer incidents to improve service

- What happened?
- Was it something in particular about this store?
- Could other people have the same experience?
- How can we make things right?

This information could be used to improve the customer experience
Example #2: Tracking crime to improve reporting and better allocate resources

• Where was it stolen?
• Was a report filed with police?

Over time, this information could suggest how to allocate officers or funds to different areas of the city.
Example #3:
Tracking wait times at airport security checkpoints, shows updates may indirectly suggest person has info.

• How long did it take to get through security?

This information could be used by the security agency (TSA) to identify problem spots and allocate officers. It can also be used by consumers to plan their air travel.
How do we capture information that is not shared?
Short Answer:

Ask Questions
Engagement Continuum

qCrowd

Human do all the work

- Keyword filtering
- Unstructured engagement
- Domain-independent analytics

Analytics streamline decisions: “press button to engage”

- Scenario-based filtering
- Smart engagement recommendations (e.g., based on location inference)
- Customizable engagement scenarios
- Domain-specific analytics

System-driven engagement

- Rule-based engagement
- Exception identification and notification
- Intelligent transition to human-driven engagement as desired