Mining Whining in Support Forums with frictionary

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we live in a world where a very small number of designers create the experiences for billions of people.
but this relationship is primarily a one way communication channel
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how can 1 million users communicate back to a small number of developers?
interviews/observations
(small, possibly biased samples)

developers

users
usability testing

(missing realistic context)
large scale usage data
(no intent to explain use)
analyze tweets, e-mails, reviews, and support requests that describe problematic user experiences

Now that I upgraded F5 to F6 pressing ALT+ENTER doesn’t open the site I write in the address bar, into a new tab. 😞 😞 😞 😞 😞

One of the most convenient things and it’s gone. 😞 😞

Time to leave Firefox for a while until it gets fixed. 😞 😞

Any solutions? I have Tab Mix Plus add-on BTW.

abundant, ecologically valid, timely, free
but how can designers find and make sense of everything written about an app online?
frictionary

a “dictionary” of friction between people and software, built and organized automatically
automatically extracts problem topics from web discussions about software
distinguishes between phrases about the application ("the share button doesn’t work") and phrases about other things ("my grandma wants to see my photos")
organizes these phrases to support sensemaking by designers
frictionary extracts problematic software features from text

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alt+enter site opening
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Any solutions?

I have Tab Mix Plus add-on BTW.
parse each sentence using a natural language parser

(S (PP (Now) (that) (PRP i) (VBD upgraded) (PRP F5) (TO to) (PRP F6)) (SBAR (VP (VBG pressing) (PRP ALT+ENTER) (MD doesn't) (VP (VB open) (PP (NP (DT the) (NN site) (PRP i) (VB write)) (IN in) (DT the) (NP (NN address) (NN bar)) (PP (IN into) (DT a) (JJ new) (NN tab))))))

(S (FRAG (PP (DT One) (IN of) (DT the) (RB most) (JJ convenient) (NN things) (CC and) (PRP it) (VB 's) (JJ gone))))

(S (NN Time) (TO to) (VP (VB leave) (NN Firefox) (PP (IN for) (DT a) (NN while) (PP (IN until) (PRP it) (VB gets) (VB fixed))))).

(S (FRAG (DT Any) (NN solutions))?)

(S (VP (PRP I) (VB have) (NP (NN Tab) (NN Mix) (NN Plus) (NN add-on) (NN BTW)))).
identify non-past tense clauses with inanimate subjects containing UI terminology

(S (PP (Now) (that) (PRP i) (VBD upgraded) (PRP F5) (TO to) (PRP F6)) (SBAR (VP (VBG pressing) (PRP ALT+ENTER) (MD doesn't) (VP (VB open) (PP (NP (DT the) (NN site) (PRP i) (VB write)) (IN in) (DT the) (NP (NN address) (NN bar)) (PP (IN into) (DT a) (JJ new) (NN tab)))))

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(S (NN Time) (TO to) (VP (VB leave) (NN Firefox) (PP (IN for) (DT a) (NN while) (PP (IN until) (PRP it) (VB gets) (VB fixed)))).

(S (FRAG (DT Any) (NN solutions))?)

(S (VP (PRP I) (VB have) (NP (NN Tab) (NN Mix) (NN Plus) (NN add-on) (NN BTW)))).
identify subject, verb, and object in clause

(S (PP (Now) (that) (PRP i) (VBD upgraded) (PRP F5) (TO to) (PRP F6)) (SBAR (VP (VBG pressing) (PRP ALT+ENTER) (MD doesn't) (VP (VB open) (PP (NP (DT the) (NN site) (PRP i) (VB write)) (IN in) (DT the) (NP (NN address) (NN bar)) (PP (IN into) (DT a) (JJ new) (NN tab)))))

(S (FRAG (PP (DT One) (IN of) (DT the) (RB most) (JJ convenient) (NN things) (CC and) (PRP it) (VB 's) (JJ gone)))

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(S (VP (PRP I) (VB have) (NP (NN Tab) (NN Mix) (NN Plus) (NN add-on) (NN BTW)))).
standardize the topic phrasing

(S (PP (Now) (that) (PRP i) (VBD upgraded) (PRP F5) (TO to) (PRP F6)) (SBAR (VP (VBG pressing) (PRP ALT+ENTER) (MD doesn't) (VP (VB open) (PP (NP (DT the) (NN site) (PRP i) (VB write)) (IN in) (DT the) (NP (NN address) (NN bar)) (PP (IN into) (DT a) (JJ new) (NN tab))))))

alt+enter site opening

subject object verb-ing
aggregate by phrase and visualize
(applied to 100,000 Firefox posts from the web)
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(applied to 100,000 Firefox posts from the web)

issue volume over time can reveal
trends in the number of problems
that people are experiencing across
successive releases
aggregate by phrase and visualize
(applied to 100,000 Firefox posts from the web)

faceted browsing by topics, features and user interface actions allows view to drill down into specific app features
### basic stats

<table>
<thead>
<tr>
<th>#</th>
<th>number of posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>proportion of posts containing topic</td>
</tr>
<tr>
<td>+/-</td>
<td>change in # of posts</td>
</tr>
<tr>
<td>😊</td>
<td>number of people mentioning this feature</td>
</tr>
</tbody>
</table>

#### Nothing actions

418 people wrote 461 *nothing* posts in this period, mentioning 73 issues. Below are the top 1,000 actions.

![Plot of actions](image)

<table>
<thead>
<tr>
<th>nothing happening</th>
<th>213</th>
<th>47</th>
<th>+51</th>
<th>198</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>nothing working</td>
<td>66</td>
<td>15</td>
<td>+11</td>
<td>63</td>
<td>13</td>
</tr>
<tr>
<td>nothing helping</td>
<td>29</td>
<td>7</td>
<td>+9</td>
<td>28</td>
<td>109</td>
</tr>
<tr>
<td>nothing showing</td>
<td>20</td>
<td>5</td>
<td>+8</td>
<td>20</td>
<td>17</td>
</tr>
<tr>
<td>nothing changing</td>
<td>20</td>
<td>5</td>
<td>+5</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>nothing appearing</td>
<td>9</td>
<td>2</td>
<td>-2</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>nothing downloading</td>
<td>6</td>
<td>2</td>
<td>+6</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>nothing coming</td>
<td>6</td>
<td>2</td>
<td>-9</td>
<td>6</td>
<td>283</td>
</tr>
<tr>
<td>nothing getting</td>
<td>6</td>
<td>2</td>
<td>+5</td>
<td>6</td>
<td>102</td>
</tr>
<tr>
<td>nothing opening</td>
<td>5</td>
<td>2</td>
<td>-3</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>nothing doing</td>
<td>5</td>
<td>2</td>
<td>+4</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>nothing installing</td>
<td>4</td>
<td>1</td>
<td>-1</td>
<td>4</td>
<td>27</td>
</tr>
<tr>
<td>nothing clicking</td>
<td>4</td>
<td>1</td>
<td>+1</td>
<td>4</td>
<td>121</td>
</tr>
<tr>
<td>nothing popping</td>
<td>4</td>
<td>1</td>
<td>+4</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>nothing using</td>
<td>3</td>
<td>1</td>
<td>+2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>nothing knowing</td>
<td>3</td>
<td>1</td>
<td>+3</td>
<td>3</td>
<td>107</td>
</tr>
<tr>
<td>nothing seeing</td>
<td>3</td>
<td>1</td>
<td>+2</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>
“vocality” (!!)

median # of posts written by users mentioning this topic

a measure of the extent to which this complaint comes from particularly vocal users

high vocality = a pet peeve of frequent posters
topics drill down to the posts, which highlight extracted topics

nothing happening quotes
198 people wrote nothing happening posts 233 times in this period.

Firefox will no longer let me listen to writers almanac or access the live chat button on zone alarm

when I click on the listen button, nothing happens, ditto the live chat button

topics
firefox letting
nothing happening
live chat button dittoing

other topics mentioned elsewhere
firefox wont load videos on adultswim.com and a few other sites

Is is possible to get rid of that annoying bottomline news feed?
analyzed 89,760 posts about Firefox

interviewed Firefox support lead and Firefox principal designer about the value the data might provide

“It was really interesting to see changes over time for the most critical features, like the application being able to install or update. Unlike crash reports, we currently don't have a good way of instrumenting and monitoring when an install or update failed, so visualizing quantitative data coming out of support requests for that feature is really valuable.”
an interesting discovery

one of the most persistent and frequent problems described is “nothing happening” after a click

fundamental usability problem that is underreported in Firefox bug reports
Frictionary is just one example of big data analytics on text user feedback...

could use large scale descriptions of user experience to...

extract and identify workarounds

track feature usage without software instrumentation

enable UX crisis informatics

give whole populations users a voice in how software evolves
questions?