

# Trendy Bugs

## Topic Trends in the Android Bug Reports



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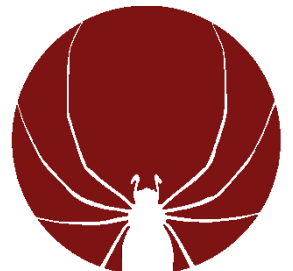


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DEBUGGING, COMPREHENSION, AND MAINTENANCE




# Research question

- Can the wisdom of the crowd be used to understand problematic trends in the Android Open Source Project?



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Android - An Open Handset Alliance Project

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ID	Type	Status	Owner	Summary + Labels	Stars
<a href="#">29843</a>	Defect	New	---	In case1 "Select photo" options are displayed and in case 2 "Select photo" options are not displayed.	1
<a href="#">29842</a>	Defect	New	---	Problem In case1 "Select photo" options are displayed and in case 2 "Select photo" options are not displayed.	1
<a href="#">29841</a>	Defect	New	---	Problem "Add a photo" option displays as disable while it is working.	1
<a href="#">29840</a>	Defect	New	---	Gmail options are appearing but not working in Gmail when it is not signed in.	1
<a href="#">29839</a>	Defect	New	---	White screen appears on pressing home key on Add google account screen is Talk	1
<a href="#">29838</a>	Defect	New	---	Force close is displaying in Google search	1
<a href="#">29837</a>	Defect	New	---	Phone is displaying blank tab instead of google help.	1
<a href="#">29836</a>	Defect	New	---	Musi	
<a href="#">29835</a>	Defect	New	---	Imag	
<a href="#">29834</a>	Defect	New	---	Disal	
<a href="#">29833</a>	Defect	New	---	Even	
<a href="#">29832</a>	Defect	New	---	Glitc	
<a href="#">29831</a>	Defect	New	---	Acce	
<a href="#">29830</a>	Enhancement	New	---	more	
<a href="#">29829</a>	Defect	New	---	upda	
<a href="#">29827</a>	Defect	New	sm...@android.com	Out o	
<a href="#">29826</a>	Defect	New	---	Mms	
<a href="#">29825</a>	Enhancement	New	---	Upda	
<a href="#">29824</a>	Defect	New	sm...@android.com	Error	
<a href="#">29823</a>	Defect	New	sm...@android.com	Miss	
<a href="#">29822</a>	Defect	New	---	Infini	
<a href="#">29821</a>	Defect	New	---	Cras	
<a href="#">29820</a>	Defect	New	---	[New	

**Issue [29792](#): SMS Delivery Reports details for sent messages**  
3 people starred this issue and may be notified of changes.

**Status:** New  
**Owner:** ---

**Type:** Enhancement  
**Priority:** Medium

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Reported by [philip.j...@gmail.com](#), Apr 30 (4 days ago)

This is essentially the inverse of [Issue 2989](#).

It would be nice if under 'view details' for an SMS message you have sent you could see the timestamp for when it was received according the the delivery report. At present all you get on the SMS thread and the details is the time you sent the message.

If you have sent a message but are not looking at your phone when the delivery report is received and so don't see the toast, you have no way of knowing later the delay between when you sent your message and when it was received.

For comparison this feature exists in Maemo on the Nokia N900, and I believe in other Nokia smart and feature phones but don't have any available to check.

As far as I can see this feature has never existed in the stock messaging app on any version of Android.

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Comment [1](#) by [ayk...@gmail.com](#), Apr 30 (3 days ago)

I have a galaxy note, using stock rom. I have 2 timestamps, sent time and delivery status (received/failed) with its time. Might be samsung's addition as I don't have experience with any AOSP rom.

---

Comment [2](#) by [philip.j...@gmail.com](#), Apr 30 (3 days ago)

I'm using a HTC Desire Z, this is missing from HTC's messaging app but I've also used this device and some others with AOSP based roms for Android 2.2, 2.3 and 4.0.4.

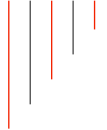
I've also got an Xperia X10 mini pro, which with both manufacturers ROM and an AOSP based rom lacks this feature.

# The data

```
<bug>
<bugid>bug number</bugid>
<title>bug title</title>
<status>bug status e.g. new, closed, etc.</status>
<owner>developer who owns the bug</owner>
<type>type of bug e.g. Defect, enhancement etc.</type>
<priority>priority of the bug</priority>
<component>
component of the project the bug belongs to
</component>
<closedOn> when the bug was closed ("null" if not closed)
</closedOn>
<stars>how many people voted or starred the issue</stars>
<reportedBy>email id of person reporting the bug</reportedBy>
<openedDate>date the bug was filed</openedDate>
<description>description of the bug</description>
<comment>
<who>person who commented</who>
<when>time when commented</when>
<what>text of the comment</what>
</comment>
</bug>
```

comment

comment



# Example from the 87,899 comments

<openedDate>Thu, 28 Apr 2011 03:24:06 +0000</openedDate>

<title>call this number until it's not busy</title>

<description>

Instead of just having "call this number" as an option, maybe add "call this number until I get through." I don't know, though-- this might result in folks "calling a number until they get through", and waiting so long that they put the phone down & walk away, leaving the person they called and finally got through to wondering why their phone rang with no one on the other end? But assuming **\*most\*** people wouldn't be that irresponsible, **\*maybe\*** it's a good idea. Maybe make it optional and default to 'not available as a calling option', as I'd guess most folks don't browse through their settings. Maybe it's **\*only\*** an option on a missed call in the call log due to a busy signal. And maybe once you connect, it's removed as an option from everything in the call log for this number. This paragraph is so that folks don't overuse (and maybe abuse) the "call until connected" feature until they at least try ONCE, and get a busy signal. After they try regular dial at least once, and it's busy, if they then visit that entry in the call log, "call until not busy" has appeared. Just a thought.

</description>

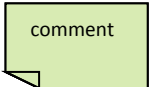


<comment>

<when>Wed, 04 May 2011 06:15:42 +0000</when>

<what>Isn't this what email is for?</what>

</comment>



<comment>

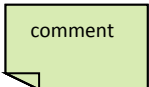
<when>Wed, 04 May 2011 13:00:25 +0000</when>

<what>

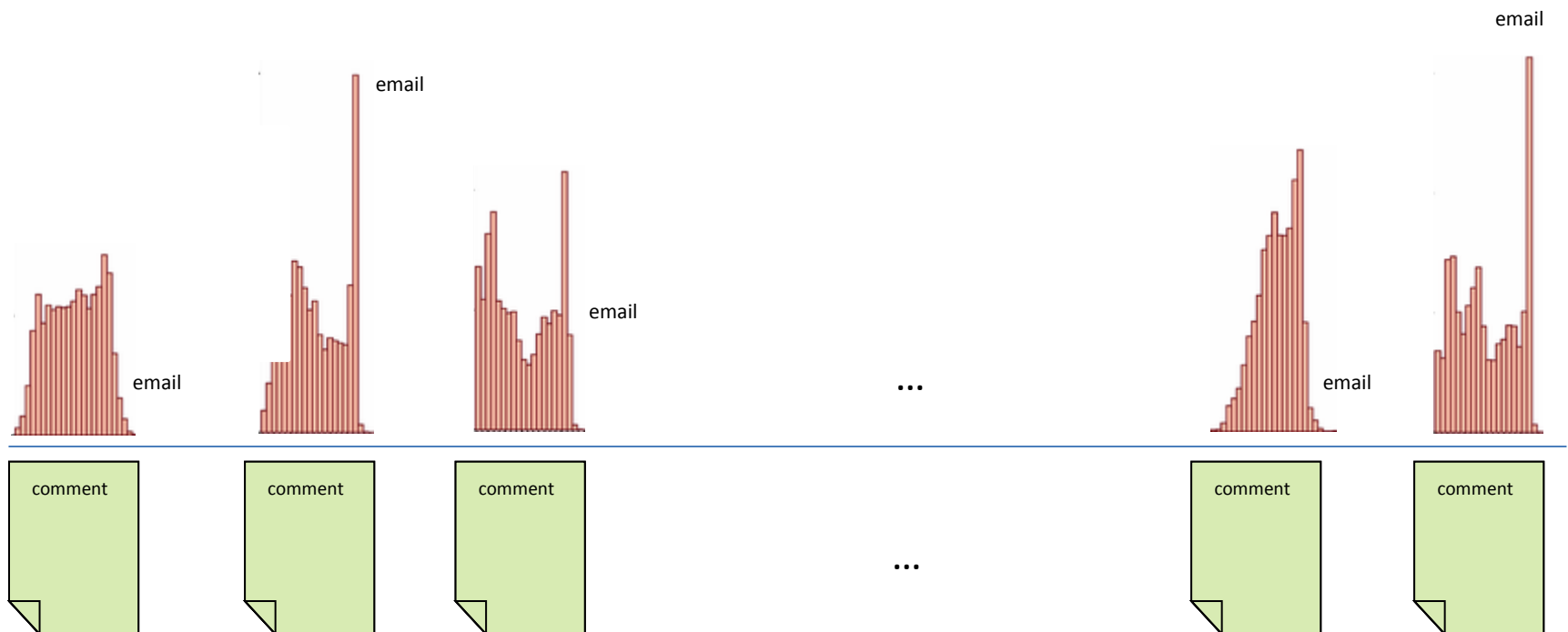
Well, to my thinking, yes & no. With email-- IF this contact has email, does your grandma?-- you are pretty sure only that they'll see the message someday. That works for anything that's not time sensitive. But that doesn't work when they REALLY don't get to email very often-- remember, much of the world doesn't get email on their cell phones-- and you really do need to deliver this message soon. To me, the difference is "Hey, I can check my email any ol' time, so why now" vs. "Ooh, hey, the phone is ringing right now." I mean, even if an answering machine picks up, I highly suspect that gets checked more often than email in MOST cases. Just food for the conversation-- thoughts? I know this may turn into a somewhat controversial feature request, that's why it should be talked out well. But hey, open-source technology is changing the landscape of many models we've held for years, why not change the way the phone game is played?

</what>

</comment>



- We used machine learning to fit a LDA model to the data.
- LDA is a method for extracting higher level topics in a corpus of documents.

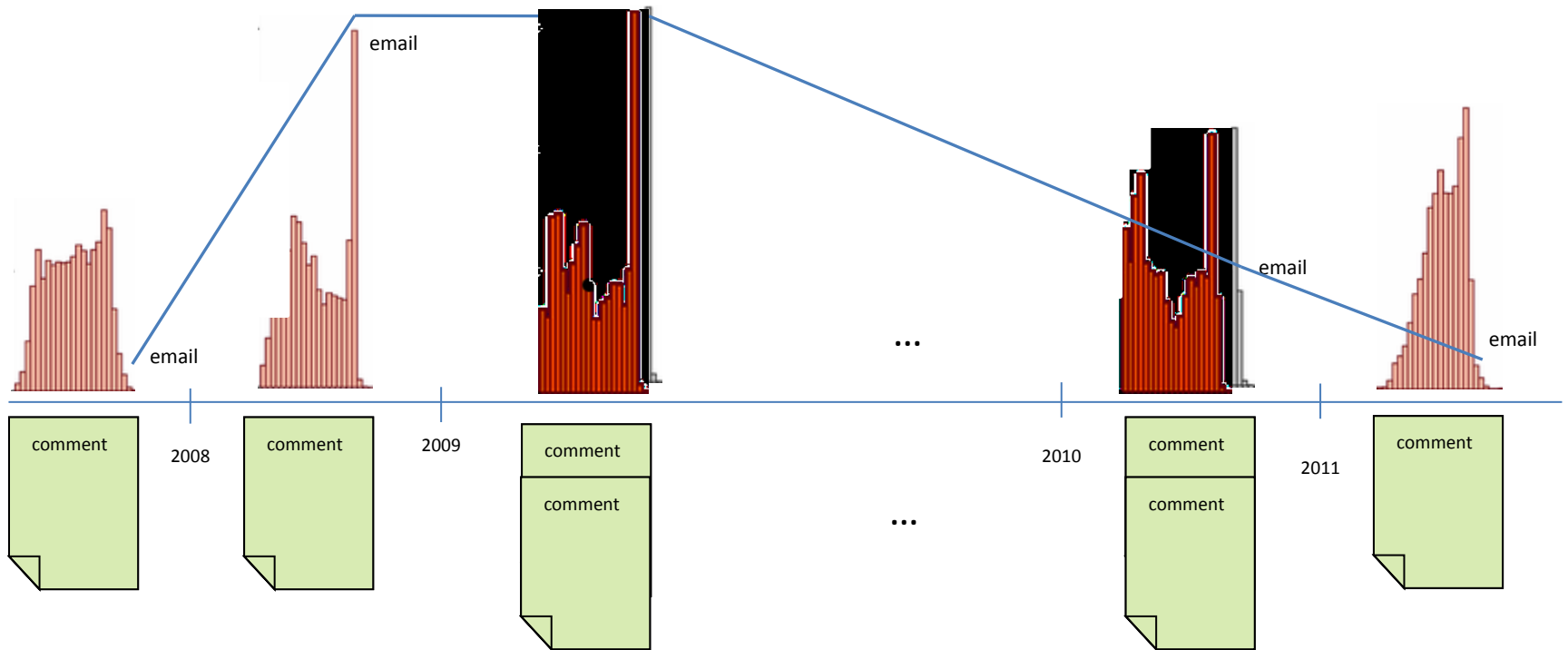


# Topics results

<p>0 emulator adb android system  1 droid motorola android problem  <b>2 {Issue Assignments} –  issue engineer assigned work</b>  3 permission android permissions  app  4 server ssl certificate client  5 android code api application  6 vpn connect mtpd server  7 contacts contact phone sync  8 good great google idea  9 nexus issue problem froyo  <b>10 {Email} –  email client youq device</b>  11 database sqlite android content  12 dalvikvm ms bytes gc  13 hardware bluetooth support  android  14 email mail gmail exchange  15 app apps market android  16 settings menu option select  17 user feature option make  18 music player mp video  <b>19 {Calendar} –  calendarparser ad key verify</b>  20 data reset settings phone  <b>21 {Forum Support} –  google mobile forum android</b>  <b>22 {Fixed Issues} –  fixed sdk release issue</b>  23 screen button home back  24 code test log problem</p>	<p><b>25 {Code Review} –  source android review https</b>  26 iq em eve ed  <b>27 {Issues} –  id google android issues</b>  28 problem issue solution fix  29 view screen touch mode  30 http android html developer  31 text keyboard type key  32 card sd sim memory  33 samsung galaxy problem  android  34 number phone numbers call  <b>35 {String} –  java string public import</b>  <b>36 {Issue Tracker} –  apps bug tracker google</b>  37 java org apache harmony  38 android phone feature google  39 call phone calls incoming  40 bug issue report fixed  41 proxy address apn ipv  42 eq string uri html  43 memory mb size system  44 htc desire problem android  45 project file android xml  46 usb device driver phone  <b>47 {Media Codecs} –  return omxcodec cpp media</b>  48 search list add find  <b>49 {Runtime} – view android  java androidruntime</b>  50 bluetooth phone car music</p>	<p><b>51 {HTTP} –  http thread google www</b>  <b>52 {Debugger} –  debug info system lib</b>  53 eclipse android sdk windows  54 phone alarm volume mode  55 test cts android tests  <b>56 {Graphics Library} –  gl public void int</b>  <b>57 {Issues} – issue merged  duplicate resolved</b>  58 thread state event wait  59 file files download directory  60 update problem issue version  61 gps location maps google  62 error unable open stack  63 time date zone timezone  <b>64 {XML Schema} –  android layout xml id</b>  65 class method null string  <b>66 {Kernel Code} –  git kernel platform android</b>  <b>67 {Device} –  android source report devices</b>  68 mediaplayer audio media xx  69 calendar event events google  70 fix google issue phone  <b>71 {Runtime} – java android  androidruntime os</b>  72 google issue comments people  73 font support characters android  74 wifi network connection  connect</p>	<p><b>75 {Issues} –  problem show issues order</b>  <b>76 {Forum Support} –  google android forum bugs</b>  <b>77 {Eclipse} –  java eclipse org internal</b>  78 language support android  keyboard  79 works work fine problem  80 es itq thatq thereq  81 intent action android true  <b>82 {CPU} –  timed identity cpu pegged</b>  83 time data make lot  84 browser page web android  85 problem phone back issue  86 ere youq weq ell  87 message sms messages text  88 honeycomb transformer tablet  asus  <b>89 {Build} –  build target lib mk</b>  <b>90 {Security} –  ca ou cn certificate</b>  91 activity dialog called call  92 phone battery time problem  93 build version android mobile  94 image gallery camera images  95 system err locale en  96 protocol canvas draw pppd  97 camera preview bitmap xb  98 voice phone bluetooth dial  99 google account gmail password</p>
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# Trend lines







# Future work

