

# DELETED Information & Cell Phones

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One of the questions I most often receive as a mobile forensics examiner is "How long does a deleted text message remain in a cell phone?" There are several factors involved that must be considered before there can be any definitive answer. Let's consider these variables:

1. *The Actual Cell Phone Itself:* there are over 1400 different models of cell phones today. Each model has its own unique structure between the software and the phone's memory.
  - a. Software: most phones have what's called "proprietary" software. That means the manufacturer developed a unique software for a particular phone and will not reveal that software to the general public.
  - b. Memory: there can be up to three types of memory in a cell phone: the flash memory, the SIM Card and a Micro SD card. The software can be programmed to route the text messages to any or all of these receptacles. However, bear in mind that the flash memory and SIM card have memory limits. Yes, I am aware of the Apple iPhone with its solid state memory, but for simplicity, the iPhone is not being considered or discussed in this article. That is another animal in itself for another time.
2. *The "Traffic" on the Phone:* by this I mean the amount of other data that is coming into and going out of the cell phone. This data can be in the form of pictures, videos, ring tones, music, other text messages, etc.

Now, let's say you deleted a text message and the phone saves all text messages in the flash memory. What happens? The text message is still there but by being deleted it now must give up its space for saved data. When other data comes in, this new data "steps on" the deleted data. Too much data coming in and stepping on the deleted data will eventually render the deleted data unreadable. For clarity's sake let me use this analogy: Suppose you have a piece of hard candy, like what you get at Christmas time. You go to a major interstate highway and lay that piece of candy in the fast lane. Come back in a day and what will you see? Nothing. And if anything, dust. That is the way it is with deleted information on your phone. The more it gets "stepped on" the less recognizable it will be and the less recoverable.

So, taking these factors into account, what should you do if you wish to recover deleted data?

1. Turn the phone off. This will take the phone off the towers and not allow other data to reach the phone's memory.
2. Have the phone examined by a competent cellular forensics examiner who has the necessary software to recover deleted data.

These two steps above apply whether it's a phone for a case you are investigating or your own personal phone. Will the examiner be able to recover the lost data? Go back to #1 and #2. What kind of phone is it and how much traffic has it seen since the deletion? I have recovered text messages from over a year on one phone while on others less than 3 weeks time. Every case is different and no examiner can honestly promise you anything because we don't know what activities the phone has been through.

So, to answer the question, "How long does a deleted text message stay in a phone?" the answer is simply, "Until it no longer can be recognized." Turn the phone off, get it examined and cross your fingers.

--- **Thomas J. Slovenski** is a certified mobile forensics examiner and owner of Cellular Forensics, LLLC based in South Carolina. Mr. Slovenski was the very first to open a private mobile data forensics laboratory in his state where he works on cases for law enforcement, attorneys, law professionals and other private entities. Besides examining cell phones, Mr. Slovenski has published numerous articles on the subject of cellular forensics and is a well know speaker on the subject. He is also on the advisory board of Fast Forensics, Inc., a progressive company manufacturing mobile forensic products for forensic professionals. You may contact Thomas at [tom@cellularforensics.com](mailto:tom@cellularforensics.com) or visit his website: [www.cellularforensics.com](http://www.cellularforensics.com)