

DIFFERENCE BETWEEN GSM AND CDMA

The world's renowned mobile phone network technologies are GSM (Global System for Mobile Communication) and CDMA (Code Division Multiple Access). These two technologies differ in the way calls and data travel over the mobile phone networks. In second and third generation wireless communication a protocol named CDMA came into existence. This technology makes optimal use of available bandwidth and is based on spread spectrum technology. It allows each user to transmit over the entire frequency spectrum all the time.

On the other hand GSM operates on the wedge spectrum called a carrier. This carrier is divided into a number of time slots and each user is assigned a different time slot so that until the ongoing call is finished, no other subscriber can have access to this. GSM uses both Time Division Multiple Access (TDMA) and Frequency Division Multiple Access (FDMA) for user and cell separation. TDMA provides multiuser access by chopping up the channel into different time slices and FDMA provides multiuser access by separating the used frequencies.



SIM CARDS

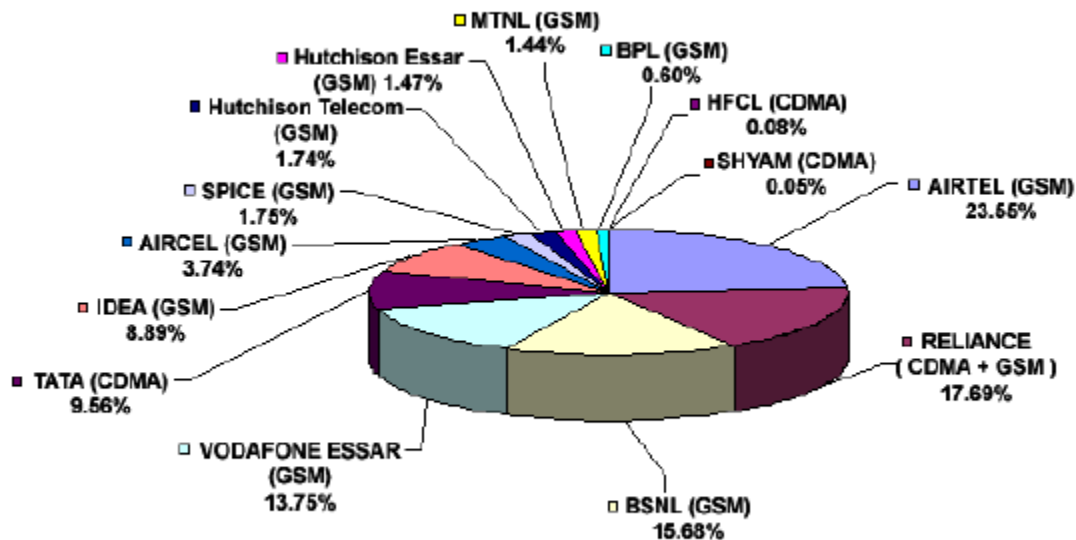
A specialized card is required in GSM phones known as SIM (Subscriber Identity Module). These are carrier specific and can be replaced from one phone to another with the saved data protected. While the CDMA devices do not use SIM cards, but rather rely on ESNs (Electronic Serial Numbers). To activate a phone, the user has to call their carrier or can use online system to perform an 'ESN' change. As no SIM cards are used here so swapping of devices becomes difficult here as user has to follow the above procedure.



DATA NETWORKS

Several forms of mobile data communication are offered by CDMA and GSM. The first option is GPRS which is available for both the networks at an average speed of 150 to 170 kbps. Three to five times more speed is offered by the 'Edge' which is available only for GSM carrier. EVDO Rev. 0 network is the newest form of CDMA technology which offers a data speed of 5.4 mbps. 3G networks offer a data speed of upto 7.2 mbps which is comparable to EVDO Rev. A result.

Group Company wise Market Share as on 30/06/07



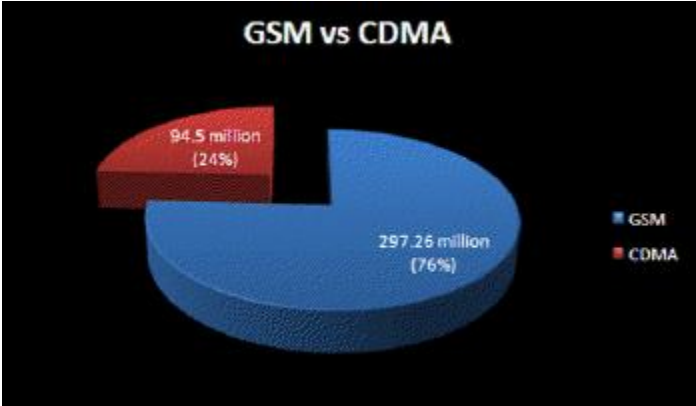
Presented by India-Cellular.com

GSM AND CDMA SPECTRUM FREQUENCIES

The CDMA network operates in the frequency spectrum of CDMA 850 MHz and 1900 MHz while the GSM network operates in the frequency spectrum of GSM 850 MHz and 1900 MHz.

DATA COVERAGE

The coverage area of CDMA is more limited than GSM. As the European Union permissions GSM use, so CDMA is not supported in Europe. In North America, especially in rural areas, more coverage is offered by CDMA as compared to GSM. As GSM is an international standard, so it's better plan to use GSM in international roaming. GSM is in use by 76% of users as compared to CDMA which is in use by 24% users.



DATA TRANFER RATE

CDMA has faster data rate as compared to GSM as EVDO data transfer technology is used in CDMA which offers a maximum download speed of 2 mbps. EVDO ready mobile phones are required to use this technology. GSM uses EDGE data transfer technology that has a maximum download speed of 384 kbps which is slower as compared to CDMA. For browsing the web, to watch videos and to download music, CDMA is better choice as compared to GSM. So CDMA is known to cover more area with fewer towers.

GLOBAL REACH

GSM is in use over 80% of the world's mobile networks in over 210 countries as compared to CDMA. CDMA is almost exclusively used in United States and some parts of Canada and Japan.



MISCONCEPTION OF CDMA

CDMA is known to be an outdated technology largely due to network's global reach issue but it is not so. CDMA is actually a newer technology than GSM and it offers some of the newest calling and data options (EVDO Rev. O).

FLEXIBILITY

GSM is more flexible than CDMA as wide range of phones can be used with this service. The SIM card can be placed in any GSM supporting hardware and can have access to all the contacts. But this is not the case with the CDMA phones as they are activated on the basis of the ESN. The CDMA works only if ESN is registered in its database. In case the current CDMA phone stops work, a new phone has to be bought, but this not the case with the GSM phones. In GSM phones all the information can be retained in the SIM card that can be put in a different set and can be used with the same number.

SECURITY

More security is provided in CDMA technology as compared with the GSM technology as encryption is inbuilt in the CDMA system and this technology uses the spread spectrum signal. The signal cannot be detected easily in CDMA as compared to the signals of GSM, which are concentrated in the narrow bandwidth. Therefore, the CDMA phone calls are more secure than the GSM calls. In terms of encryption the GSM technology has to be upgraded so as to make it operate more securely.

RADIATION EXPOSURE

GSM phones emit continuous wave pulses, so there is a large need to reduce the exposures to electromagnetic fields focused on cell phones with "continuous wave pulses". On the other hand CDMA cell phones do not produce these pulses. GSM phones emit about 28 times more radiation on average as compared to CDMA phones. Moreover, GSM phones are more biologically reactive as compared to CDMA.

Source: <http://www.udaiportalents.com/technical-learning/difference-between-gsm-and-cdma>