

3G - THE NEXT REVOLUTION IN MOBILE TELEPHONY

- JASHODA CHETTRI

The first radiotelephone service was introduced in the US at the end of the 1940s, and was meant to connect mobile users in cars to the public fixed network. In the 1960s, a new system launched by Bell Systems, called "Improved Mobile Telephone Service" (IMTS), brought many improvements like direct dialling and higher bandwidth (The amount of data that can be transmitted in a fixed amount of time.). The first analog cellular systems were based on IMTS and developed in the late 1960s and early 1970s. The systems were "cellular" because coverage areas were split into smaller areas or "cells", each of which is served by a low power transmitter and receiver.

This first generation (1G) analog (alternating frequency is modified in some way) system for mobile communications saw two key improvements during the 1970s: the invention of the microprocessor and the digitization of the control link between the mobile phone and the cell site.

Second generation (2G) digital cellular systems were first developed at the end of the 1980s. These systems digitized not only the control link but also the voice signal. The new system provided better quality and higher capacity at lower cost to consumers.

Third generation (3G) systems promise faster communications services, including voice, fax and Internet, anytime and anywhere with seamless global roaming. ITU's IMT-2000 global standard for 3G has opened the way to enabling innovative applications and services (e.g. multimedia entertainment, infotainment and location-based services, among others). The first 3G network was deployed in Japan in 2001. 2.5G networks, such as GPRS (Global Packet Radio Service) are already available in some parts of Europe.

WHAT IS 3G?	3G is the third generation of wireless technologies. It comes with enhancements over previous wireless technologies, like high-speed data transmission, advanced multimedia access and global roaming. 3G is mostly used with mobile phones and handsets as a means to connect the phone to the Internet or other Internet Protocol
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	networks in order to make voice and video calls, to download and upload data and to surf the internet.
WHERE AND WHEN 3G WAS FIRST INTRODUCED?	3G was introduced in Japan in 2001 by NTT Docomo.
HOW IS 3G DIFFERENT FROM 1G & 2G?	<p>In 1G, Narrow band analogue wireless network is used, with this we can have the voice calls and can send text messages. These services are provided with circuit switching (two network nodes establish a dedicated communications channel (circuit) connecting them for the duration of the communication session before the nodes may communicate). Today the usual call starts from the beginning pulse to rate to the final rate. In case of 2G Narrow Band Wireless Digital Network is used.</p> <p>1. Both 1G and 2G deal with voice calls and have to utilize the maximum bandwidth as well as a limited till sending messages i.e. SMS. The latest technologies such as GPRS, is not available in these generations. But the greatest disadvantage as concerned to 1G is that with this we could contact with in the premises of that particular nation, where as in case of 2G the roaming facility a semi-global facility is available. In addition to that 3G also has entertainments such as Fast Communication, Internet, Mobile T.V, Video Conferencing, Video Calls, Multi Media Messaging Service (MMS), 3D gaming, Multi-Gaming etc are also available with 3G phones.</p>
HOW DOES 3G WORK?	<p>3G-enabled devices – including phones and laptops – work by sending and receiving radio signals to and from base stations (sometimes known as ‘masts’). Base stations link individual phones into the rest of the mobile and landline networks.</p> <p>Base stations are low power radio</p>

	<p>transmitters and need to be located in the areas they are intended to serve. They provide coverage to a geographical area known as a cell. These cells need to overlap to enable seamless coverage and to ensure a user does not lose connection to the network when on the move.</p> <p>Radio waves used in mobile telecommunications form part of the electromagnetic spectrum. Radio waves used to deliver 3G services are transmitted at a slightly higher frequency than for 2G and travel a shorter distance. As a result the coverage area or cell size for a 3G base station is smaller than for a 2G site. Furthermore, as user demand increases in a particular cell, the size of that cell shrinks making overlap even more essential.</p>
<p>WHAT ARE THE FEATURES OF 3G?</p>	<p>Enhanced multimedia (voice, data, video, and remote control) Usability on all popular modes (cellular telephone, e-mail, paging, fax, videoconferencing, and Web browsing Broad bandwidth and high speed (upwards of 2 Mbps) Routing flexibility (repeater, satellite, LAN) Operation at approximately 2 GHz transmit and receive frequencies Global roaming capabilities.</p> <p>Mobile Interview 3G technology will enable organizations and qualified candidates to have a telephonic interview in a modern way through video conferencing. Traditional telephonic interview and personal interviews may be replaced by 3G voice and video conferencing. This will reduce the cost and save the time of both the organizations and the candidates.</p> <p>Conferences 3G technology provides for video conferencing which can help the Human Resource Department interact with their seniors at the time of urgency without wasting other resources. This can be very</p>

	<p>much helpful when the concerned person is out of state or country.</p> <p>File Transfer With the advent of video and audio multimedia and a faster rate of downloading e-mail attachments, employees in an organization can request any urgent file or report they need to present to the clients. This will again reduce the burden on organization's resources and increase employee effectiveness.</p> <p>E-learning & M-learning 3G technology provides for internet browsing that will help the employees to surf and learn using their 3G cell phones while traveling (m-learning) or from home. The organizations can schedule training modules for the employees of other branches through video conferences.</p>
WHAT IS 3G SPECTRUM?	<p>Spectrum refers to a range of radio frequencies. The bandwidth of a radio signal is the difference between the upper and lower frequencies of the signal.</p> <p>For example, in the case of a voice signal having a minimum frequency of 200 hertz (Hz) and a maximum frequency of 3,000 Hz, the bandwidth is 2,800 Hz (3 KHz). The amount of bandwidth needed for 3G services could be as much as 15-20 Mhz, whereas for 2G services a bandwidth of 30-200 KHz is used. Hence, for 3G huge bandwidth is required.</p>
DO ALL MOBILE PHONES SUPPORT 3G?	<p>No. All of mobiles do not support 3G Some mobile phones which support 3G are:</p> <ol style="list-style-type: none"> 1.Apple iPhone 3G 2.Nokia E71 3.Samsung i900 Omnia 4.Nokia N96 5.Blackberry Bold 9000 6.Palm Treo 750 7.Nokia N85 8.Motorola Q9h 9.Nokia N73

	10.Nokia N70
IS 3G AVAILABLE IN BOTH PRE- PAID AND POST PAID PLANS?	Yes, 3G is available in both pre paid and post paid plans.
WHAT ARE THE TARIFFS FOR 3G?	Tariffs vary from plan to plan. Data charges are calculated on basis of transfer of data in mega bytes.
WHICH INDIAN COMPANIES HAVE BEEN GRANTED 3G LICENCE?	<p>3G spectrum has been provided to GSM players like Bharat Sanchar Nigam Limited, Mahanagar Telephone Nigam Limited, Bharti Airtel and Vodafone Essar (then Hutch) to carry out an interface check on a non-commercial basis ahead of the start of 3G mobile services.</p> <p>Corporate giant Tatas recently asked the government to seek surrender of excess spectrum lying with GSM operators, a line being aggressively pursued by Reliance Communications</p>
WHAT ARE THE ISSUES REGARDING 3G FOR PROVIDERS AND USERS?	<p>Some issues are:</p> <ul style="list-style-type: none"> • High spectrum licensing fees for the 3G services • Huge capital required to build infrastructure for 3G services. • Health impact of electromagnetic waves. • Prices are very high for 3G mobile services. • Will 2G users switch to 3G services. • Will take time to catch up as the service is new.

WHAT NEXT AFTER 3G?	4G could supersede 3G in the next three years. Although carriers and governing standards bodies have not agreed upon exactly what 4G will be, it is expected to use available radio spectrum more efficiently and as a result, provide end users with cable-modem transmission speeds which will support high-quality streaming video. When fully implemented, 4G is expected to enable pervasive computing, in which simultaneous connections to multiple high-speed networks will provide seamless handoffs throughout a geographical area.
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4G is the future but 3G is the next big thing in mobile telecommunications and it is here to stay.

A conclusion is the place where you get tired of thinking.

