INTRODUCTION

(Part A)

A mobile phone (also known as a wireless phone, cell phone, or cellular telephone) is a long-range, electronic device used for mobile voice or data communication over a network of specialized base stations known as cell sites. In addition to the standard voice function of a mobile phone, telephone, current mobile phones may support many additional services, and accessories, such as SMS for text messaging, email, packet switching for access to the Internet, gaming, Bluetooth, infrared, camera with video recorder and MMS for sending and receiving photos and video, MP3 player, radio and GPS. Most current mobile phones connect to a cellular network of base stations (cell sites), which is in turn interconnected to the public switched telephone network (PSTN)

History

In 1908, U.S. Patent 887,357 for a wireless telephone was issued in to Nathan B. Stubblefield of Murray, Kentucky. He applied this patent to "cave radio" telephones and not directly to cellular telephony as the term is currently understood. Cells for mobile phone base stations were invented in 1947 by Bell Labs engineers at AT&T and further developed by Bell Labs during the 1960s. Radiophones have a long and varied history going back to Reginald Fessenden's invention and shore-to-ship demonstration of radio telephony, through the Second World War with military use of radio telephony links and civil services in the 1950s, while hand-held cellular radio devices have been available since 1973. A patent for the first wireless phone as we know today was issued in US Patent Number 3,449,750 to George Sweigert of Euclid, Ohio on June 10th, 1969.

In 1945, the zero generation (0G) of mobile telephones was introduced. 0G mobile phones, such as Mobile Telephone Service, were not cellular, and so did not feature "handover" from one base station to the next and reuse of radio frequency channels. Like other technologies of the time, it involved a single, powerful base station covering a wide area, and each telephone would effectively monopolize a channel over that whole area while in use. The concepts of frequency reuse and handoff as well as a number of other

concepts that formed the basis of modern cell phone technology are first described in U.S. Patent 4,152,647

This is the first embodiment of all the concepts that formed the basis of the next major step in mobile telephony, the Analog cellular telephone. Concepts covered in this patent (cited in at least 34 other patents) also were later extended to several satellite communication systems. Later updating of the cellular system to a digital system credits this patent. The first fully automatic mobile phone system, called MTA, was developed by Ericsson released in Sweden in 1956. This was the first system that didn't require any kind of manual control, but had the disadvantage of a phone weight of 40 kg (90 lb). MTB, an upgraded version with transistors, weighing 9 kg (20 lb), was introduced in 1965 and used DTMF signaling. It had 150 customers in the beginning and 600 when it shut down in 1983.

Dr. Martin Cooper of Motorola, made the first US analogue mobile phone call on a larger prototype model in 1973.

Martin Cooper, a Motorola researcher and executive is widely considered to be the inventor of the first practical mobile phone for handheld use in a non-vehicle setting. Cooper is the inventor named on "Radio telephone system" filed on October 17, 1973 with the US Patent Office and later issued as US Patent 3,906,166. Using a modern, if somewhat heavy portable handset, Cooper made the first call on a handheld mobile phone on April 3, 1973 to a rival, Dr. Joel S. Engel of Bell Labs.

The first commercial citywide cellular network was launched in Japan by NTT in 1979. Fully automatic cellular networks were first introduced in the early to mid 1980s (the 1G generation). The Nordic Mobile Telephone (NMT) system went online in Denmark, Finland, Norway and Sweden in 1981.

In 1983, Motorola DynaTAC was the first approved mobile phone by FCC in the United States. In 1984, Bell Labs developed modern commercial cellular technology (based, to a

large extent, on the Gladden, Parelman Patent), which employed multiple, centrally controlled base stations (cell sites), each providing service to a small area (a cell). The cell sites would be set up such that cells partially overlapped. In a cellular system, a signal between a base station (cell site) and a terminal (phone) only need be strong enough to reach between the two, so the same channel can be used simultaneously for separate conversations in different cells.

Cellular systems required several leaps of technology, including handover, which allowed a conversation to continue as a mobile phone traveled from cell to cell. This system included variable transmission power in both the base stations and the telephones (controlled by the base stations), which allowed range and cell size to vary. As the system expanded and neared capacity, the ability to reduce transmission power allowed new cells to be added, resulting in more, smaller cells and thus more capacity. The evidence of this growth can still be seen in the many older, tall cell site towers with no antennae on the upper parts of their towers. These sites originally created large cells, and so had their antennae mounted atop high towers; the towers were designed so that as the system expanded—and cell sizes shrank—the antennae could be lowered on their original masts to reduce range.

The first "modern" network technology on digital 2G (second generation) cellular technology was launched by Radiolinja (now part of Elisa Group) in 1991 in Finland on the GSM standard which also marked the introduction of competition in mobile telecoms when Radiolinja challenged incumbent Telecom Finland (now part of TeliaSonera) who ran a 1G NMT network.

The first data services appeared on mobile phones starting with person-to-person SMS text messaging in Finland in 1993. First trial payments using a mobile phone to pay for a Coca Cola vending machine were set in Finland in 1998. The first commercial payments were mobile parking trialled in Sweden but first commercially launched in Norway in 1999. The first commercial payment system to mimick banks and credit cards was launched in the Philippines in 1999 simultaneously by mobile operators Globe and Smart. The first content sold to mobile phones was the ringing tone, first launched in 1998 in Finland. The first full Internet service on mobile phones was i-Mode introduced by NTT DoCoMo in Japan in 1999.

In 2001 the first commercial launch of 3G (Third Generation) was again in Japan by NTT DoCoMo on the WCDMA standard.

Until the early 1990s, most mobile phones were too large to be carried in a jacket pocket, so they were typically installed in vehicles as car phones. With the miniaturization of digital components and the development of more sophisticated batteries, mobile phones have become smaller and lighter.

With its use by Nokia as the default ring tone, The Gran Vals by Francisco Tarrega has become arguably the most recognized tune in the world.

Growth

According to internal memos, American Telephone & Telegraph discussed developing a wireless phone in 1915, but were afraid deployment of the technology could undermine its monopoly on wired service in the U.S.

In 1947 Bell Labs was the first to propose a cellular network. The primary innovation was the development of a network of small overlapping cell sites supported by a call switching infrastructure that tracks users as they moved through a network and pass their call from one site to another without dropping the connection. Bell Labs installed the first commercial cellular network in Chicago in the 1970s.

Japan's first commercial mobile phone service was launched by NTT in 1978. By November 2007, the total number of mobile phone subscriptions in the world had reached 3.3 billion, or half of the human population (although some users have multiple subscriptions, or inactive subscriptions), which also makes the mobile phone the most widely spread technology and the most common electronic device in the world.

The first mobile phone to enable Internet connectivity and wireless email, the Nokia Communicator, was released in 1996, creating a new category of multi-use devices called smart phones. In 1999, the first mobile internet service was launched by NTT DoCoMo in Japan under the i-Mode service. By 2007 over 798 million people around the world

accessed the Internet or equivalent mobile Internet services such as WAP and i-Mode at least occasionally using a mobile phone rather than a personal computer.

Cellular systems

Mobile phones send and receive radio signals with any number of cell site base stations fitted with microwave antennas. These sites are usually mounted on a tower, pole or building, located throughout populated areas, then connected to a cabled communication network and switching system. The phones have a low-power transceiver that transmits voice and data to the nearest cell sites, normally not more than 8 to 13 km (approximately 5 to 8 miles) away.

When the mobile phone or data device is turned on, it registers with the mobile telephone exchange, or switch, with its unique identifiers, and can then be alerted by the mobile switch when there is an incoming telephone call. The handset constantly listens for the strongest signal being received from the surrounding base stations, and is able to switch seamlessly between sites. As the user moves around the network, the "handoffs" are performed to allow the device to switch sites without interrupting the call.

Cell sites have relatively low-power (often only one or two watts) radio transmitters, which broadcast their presence and relay communications between the mobile handsets and the switch. The switch in turn connects the call to another subscriber of the same wireless service provider or to the public telephone network, which includes the networks of other wireless carriers. Many of these sites are camouflaged to blend with existing environments, particularly in scenic areas.

The dialogue between the handset and the cell site is a stream of digital data that includes digitized audio (except for the first generation analog networks). The technology that achieves this depends on the system, which the mobile phone operator has adopted. The technologies are grouped by generation. The first-generation systems started in 1979 with Japan, are all analog and include AMPS and NMT. Second-generation systems, started in 1991 in Finland, are all digital and include GSM, CDMA and TDMA.

The nature of cellular technology renders many phones vulnerable to 'cloning': anytime a cell phone moves out of coverage (for example, in a road tunnel), when the signal is re-established, the phone sends out a 're-connect' signal to the nearest cell-tower, identifying

itself and signaling that it is again ready to transmit. With the proper equipment, it's possible to intercept the re-connect signal and encode the data it contains into a 'blank' phone -- in all respects, the 'blank' is then an exact duplicate of the real phone and any calls made on the 'clone' will be charged to the original account.

Third-generation (3G) networks, which are still being deployed, began in Japan in 2001. They are all digital, and offer high-speed data access in addition to voice services and include W-CDMA (known also as UMTS), and CDMA2000 EV-DO. China will launch a third generation technology on the TD-SCDMA standard. Operators use a mix of predesignated frequency bands determined by the network requirements and local regulations.

In an effort to limit the potential harm from having a transmitter close to the user's body, the first fixed/mobile cellular phones that had a separate transmitter, vehicle-mounted antenna, and handset (known as *car phones* and *bag phones*) were limited to a maximum 3 watts Effective Radiated Power. Modern *handheld* cell phones, which must have the transmission antenna, held inches from the user's skull are limited to a maximum transmission power of 0.6 watts ERP. Regardless of the potential biological effects, the reduced transmission range of modern handheld phones limits their usefulness in rural locations as compared to car/bag phones, and handhelds require that cell towers be spaced much closer together to compensate for their lack of transmission power.

Some handhelds include an optional auxiliary antenna port on the back of the phone, which allows it to be connected to a large external antenna and a 3-watt cellular booster. Alternately in fringe-reception areas, a cellular repeater may be used, which uses a long distance high-gain dish antenna or yagi antenna to communicate with a cell tower far outside of normal range, and a repeater to rebroadcast on a small short-range local antenna that allows any cellphone within a few meters to function properly.

Handsets

Nokia is currently the world's largest manufacturer of mobile phones, with a global device market share of approximately 40% in 2008. Other major mobile phone manufacturers (in order of market share) include Samsung (14%), Motorola (14%), Sony

Ericsson (9%) and LG (7%).[5] These manufacturers account for over 80% of all mobile phones sold and produce phones for sale in most countries.

Other manufacturers include Apple Inc., Audiovox (now UTStarcom), Benefon, BenQ-Siemens, CECT, High Tech Computer Corporation (HTC), Fujitsu, Kyocera, Mitsubishi Electric, NEC, Neonode, Panasonic, Palm, Matsushita, Pantech Wireless Inc., Philips, Qualcomm Inc., Research in Motion Ltd. (RIM), Sagem, Sanyo, Sharp, Siemens, Sendo, Sierra Wireless, SK Teletech, Sonim Technologies, Spice, T&A Alcatel, Huawei, Trium and Toshiba. There are also specialist communication systems related to (but distinct from) mobile phones.

There are several categories of mobile phones, from basic phones to feature phones such as music phones and camera phones, to smart phones. The first smart phone was the Nokia 9000 Communicator in 1996, which incorporated PDA functionality to the basic mobile phone at the time. As miniaturization and increased processing power of microchips has enabled ever more features to be added to phones, the concept of the smartphone has evolved, and what was a high-end smartphone five years ago, is a standard phone today. Several phone series have been introduced to address a given market segment, such as the RIM Blackberry focusing on enterprise/corporate customer email needs; the Sony Ericsson Walkman series of music phones and Cyber shot series of camera phones; the Nokia N-Series of multimedia phones; and the Apple iPhone which provides full-featured web access and multimedia capabilities.

Features

Mobile phones often have features beyond sending text messages and making voice calls, including Internet browsing, music (MP3) playback, memo recording, personal organizer functions, e-mail, instant messaging, built-in cameras and camcorders, ringtones, games, radio, Push-to-Talk (PTT), infrared and Bluetooth connectivity, call registers, ability to watch streaming video or download video for later viewing, video calling and serving as a wireless modem for a PC, and soon will also serve as a console of sorts to online games and other high quality games. The total value of mobile data services exceeds the value of paid services on the Internet, and was worth 31 billion dollars in 2006 (source Informa). The largest categories of mobile services are music, picture downloads, video gaming, gambling, video/TV.

Applications

The most commonly used data application on mobile phones is SMS text messaging, with 74% of all mobile phone users as active users (over 2.4 billion out of 3.3 billion total subscribers at the end of 2007). SMS text messaging was worth over 100 billion dollars in annual revenues in 2007 and the worldwide average of messaging use is 2.6 SMS sent per day per person across the whole mobile phone subscriber base. (Source Informa 2007). The first SMS text message was sent from a computer to a mobile phone in 1992 in the UK, while the first person-to-person SMS from phone to phone was sent in Finland in 1993.

The other non-SMS data services used by mobile phones were worth 31 Billion dollars in 2007, and were led by mobile music, downloadable logos and pictures, gaming, gambling, adult entertainment and advertising (source: Informa 2007). The first downloadable mobile content was sold to a mobile phone in Finland in 1998, when Radiolinja (now Elisa) introduced the downloadable ringing tone service. In 1999 Japanese mobile operator NTT DoCoMo introduced its mobile internet service, i-Mode, which today is the world's largest mobile internet service and roughly the same size as Google in annual revenues.

The first mobile news service, delivered via SMS, was launched in Finland in 2000. Mobile news services are expanding with many organizations providing "on-demand" news services by SMS. Some also provide "instant" news pushed out by SMS. Mobile telephony also facilitates activism and public journalism being explored by Reuters and Yahoo! and small independent news companies such as Jasmine News in Sri Lanka.

Companies like Monster are starting to offer mobile services such as job search and career advice. Consumer applications are on the rise and include everything from information guides on local activities and events to mobile coupons and discount offers one can use to save money on purchases. Even tools for creating websites for mobile phones are increasingly becoming available.

Mobile payments were first trialled in Finland in 1998 when two Coca-Cola vending machines in Espoo were enabled to work with SMS payments. Eventually the idea spread and in 1999 the Philippines launched the first commercial mobile payments systems, on

the mobile operators Globe and Smart. Today mobile payments ranging from mobile banking to mobile credit cards to mobile commerce are very widely used in Asia and Africa, and in selected European markets. For example in the Philippines it is not unusual to have one's entire paycheck paid to the mobile account. In Kenya the limit of money transfers from one mobile banking account to another is one million US dollars. In India paying utility bills with mobile gains a 5% discount. In Estonia the government found criminals collecting cash parking fees, so the government declared that only mobile payments via SMS were valid for parking and today all parking fees in Estonia are handled via mobile and the crime involved in the activity has vanished.

Mobile Applications are developed using the Six M's (previously Five M's) service-development theory created by the author Tomi Ahonen with Joe Barrett of Nokia and Paul Golding of Motorola. The Six M's are Movement (location), Moment (time), Me (personalization), Multi-user (community), Money (payments) and Machines (automation). The Six M's / Five M's theory is widely referenced in the telecoms applications literature and used by most major industry players. The first book to discuss the theory was *Services for UMTS* by Ahonen & Barrett in 2002.

The iPhone has revolutionized applications for mobile phones, allowing a vast array of applications that perform hundreds of different tasks to be easily downloaded and installed through the App Store, a native application on the iPhone, iPhone 3G and iPod touch. Using a Wi-Fi, EDGE or 3G connection, users can purchase applications (some are free) from the App Store and download them directly to the phone. Apps can also be downloaded from the iTunes Store and synced with the iPhone/iPod once the device is synced with iTunes. The App Store was developed by Apple to interface with the AT&T cellular network. T-Mobile is also developing their own version of the App Store, most likely to interface with their newest smart phone, the T-Mobile G1, the first phone built running the new Google Android cellular firmware, which was likely built as a competitor for the iPhone.

Media

The mobile phone became a mass media channel in 1998 when the first ringing tones were sold to mobile phones by Radiolinja in Finland. Soon other media content appeared such as news, videogames, jokes, horoscopes, TV content and advertising. In 2006 the

total value of mobile phone paid media content exceeded internet paid media content and was worth 31 Billion dollars (source Informa 2007). The value of music on phones was worth 9.3 Billion dollars in 2007 and gaming was worth over 5 billion dollars in 2007

The mobile phone is often called the Fourth Screen (if counting cinema, TV and PC screens as the first three) or Third Screen (counting only TV and PC screens). It is also called the Seventh of the Mass Media (with Print, Recordings, Cinema, Radio, TV and Internet the first six). Most early content for mobile tended to be copies of legacy media, such as the banner advertisement or the TV news highlight video clip. Recently unique content for mobile has been emerging, from the ringing tones and ringback tones in music to "mobisodes," video content that has been produced exclusively for mobile phones.

The advent of media on the mobile phone has also produced the opportunity to identify and track Alpha Users or Hubs, the most influential members of any social community. AMF Ventures measured in 2007 the relative accuracy of three mass media, and found that audience measures on mobile were nine times more accurate than on the internet and 90 times more accurate than on TV.

Power supply

Mobile phones generally obtain power from batteries, which can be recharged from a USB port, from portable batteries, from mains power or a cigarette lighter socket in a car using an adapter (often called battery charger or wall wart) or from a solar panel or a dynamo (that can also use a USB port to plug the phone).

Formerly, the most common form of mobile phone batteries were nickel metal-hydride, as they have a low size and weight. Lithium-Ion batteries are sometimes used, as they are lighter and do not have the voltage depression that nickel metal-hydride batteries do. Many mobile phone manufacturers have now switched to using lithium-Polymer batteries as opposed to the older Lithium-Ion, the main advantages of this being even lower weight and the possibility to make the battery a shape other than strict cuboids. Mobile phone manufacturers have been experimenting with alternative power sources, including solar cells.

SIM card

In addition to the battery, GSM cellphones require a small microchip, called a Subscriber Identity Module or SIM Card, to function. Approximately the size of a small postage stamp, the SIM Card is usually placed underneath the battery in the rear of the unit, and (when properly activated) stores the phone's configuration data, and information about the phone itself, such as which calling plan the subscriber is using. When the subscriber removes the SIM Card, it can be re-inserted into another phone and used as normal.

Each SIM Card is activated by use of a unique numerical identifier; once activated, the identifier is locked down and the card is permanently locked in to the activating network. For this reason, most retailers refuse to accept the return of an activated SIM Card.

Those cell phones that do not use a SIM Card have the data programmed in to their memory. This data is accessed by using a special digit sequence to access the "NAM" as in "Name" or number programming menu. From here, one can add information such as a new number for your phone, new Service Provider numbers, new emergency numbers, change their Authentication Key or A-Key code, and update their Preferred Roaming List or PRL. However, to prevent someone from accidentally disabling their phone or removing it from the network, the Service Provider puts a lock on this data called a Master Subsidiary Lock or MSL.

Prospects

On a numerical basis, India is the largest growth market, adding about 6 million mobile phones every month. With 256.55 million total landline and mobile phones, market penetration in the country is still low at 22.52%. India expects to reach 500 million subscribers by the end of 2010. Simultaneously, landline phone ownership is decreasing gradually and accounts for approximately 40 million connections.

An increasing number of countries, particularly in Europe, now have more mobile phones than people. According to the figures from Eurostat, the European Union's in-house

statistical office, Luxembourg had the highest mobile phone penetration rate at 158 mobile subscriptions per 100 people, closely followed by Lithuania and Italy. In Hong Kong the penetration rate reached 139.8% of the population in July 2007. Over 50 countries have mobile phone subscription penetration rates higher than that of the population and the Western European average penetration rate was 110% in 2007 (source Informa 2007). Canada currently has the lowest rates of mobile phone penetrations in the industrialized world at 58%.

There are over five hundred million active mobile phone accounts in China, as of 2007, but the total penetration rate there still stands below 50%. The total number of mobile phone subscribers in the world was estimated at 2.14 billion in 2005. The subscriber count reached 2.7 billion by end of 2006 according to Informa, and 3.3 billion by November 2007, thus reaching an equivalent of over half the planet's population. Around 80% of the world's population has access to mobile phone coverage, as of 2006. This figure is expected to increase to 90% by the year 2010.

In some developing countries with little "landline" telephone infrastructure, mobile phone use has quadrupled in the last decade. The rise of mobile phone technology in developing countries is often cited as an example of the leapfrog effect. Many remote regions in the third world went from having no telecommunications infrastructure to having satellite based communications systems. At present, Africa has the largest growth rate of cellular subscribers in the world, its markets expanding nearly twice as fast as Asian markets. The availability of prepaid or 'pay-as-you-go' services, where the subscriber is not committed to a long-term contract, has helped fuel this growth in Africa as well as in other continents.

There are three major technical standards for the current generation of mobile phones and networks, and two major standards for the next generation 3G phones and networks. All European and African countries and many Asian countries have adopted a single system, GSM, which is the only technology available on all continents and in most countries and covers over 74% of all subscribers on mobile networks. In many countries, such as the United States, Australia, Brazil, Canada, Costa Rica, India, South Korea, and Vietnam, GSM co-exists with other internationally adopted standards such as CDMA and TDMA, as well as national standards such as iDEN in the USA and PDC in Japan. Over the past

five years several dozen mobile operators (carriers) have abandoned networks on TDMA and CDMA technologies, switching over to GSM.

(Part – B)

About the Subject

Marketing is a social process, which satisfies consumers' wants. The term includes advertising, distribution and selling of a product or service. It is also concerned with anticipating the customers' future needs and wants, often through market research.

Introduction

A market-focused, or customer-focused, organization first determines what its potential customers desire, and then builds the product or service. Marketing theory and practice is justified in the belief that customers use a product or service because they have a need, or because it provides a perceived benefit.

Two major factors of marketing are the recruitment of new customers (acquisition) and the retention and expansion of relationships with existing customers (base management). Once a marketer has converted the prospective buyer, base management marketing takes over. The process for base management shifts the marketer to building a relationship, nurturing the links, enhancing the benefits that sold the buyer in the first place, and improving the product/service continuously to protect the business from competitive encroachments.

Two Levels of Marketing

Strategic Marketing attempts to determine how an organization competes against its competitors in a market place. In particular, it aims at generating a competitive advantage relative to its competitors.

Operational Marketing executes marketing functions to attract and keep customers and to

maximize the value derived for them, as well as to satisfy the customer with prompt services and meeting the customer expectations. Operational Marketing includes the determination of the marketing mix.

Web2.0 and Marketing New 4Ps

The original 4Ps concept idea was developed to help marketers manage the four most important aspect of marketing. With the Internet and the Web 2.0, marketers have needed to adapt a broader perspective on these elements. Idris Mootee devised a "New 4Ps" model in 2001 to supplement the traditional marketing 4Ps. They are Personalization, Participation, Peer-to-Peer and Predictive Modeling.

- *Personalization*: The author here refers to customization of products and services through the use of the Internet. Early examples include Dell on-line and Amazon.com, but this concept is further extended with emerging social media and advanced algorithms. Emerging technologies will continue to push this idea forward.
- *Participation*: This is to allow customer to participate in what the brand should stand for; what should be the product directions and even which ads to run. This concept is laying the foundation for disruptive change through democratization of information.
- *Peer-to-Peer*': This refers to customer networks and communities where advocacy happens. The historical problem with marketing is that it is "interruptive" in nature, trying to impose a brand on the customer. This is most apparent in TV advertising. These "passive customer bases" will ultimately be replaced by the "active customer communities". Brand engagement happens within those conversations. P2P is now being referred as Social Computing and will likely to be the most disruptive force in the future of marketing.
- *Predictive Modeling*: This refers to neural network algorithms that are being successfully applied in marketing problems (both a regression as well as a classification problem).

- **Consumer:**

Consumer Attitude toward Privacy:

Privacy refers to the degree to which personal information is not known by others (Rust, Kannan and Peng, 2002). Customer privacy has always been a critical issue in marketing, but has assumed a greater significance in recent years with the rise of Internet-based commercial transactions (Rust, Kannan and Peng, 2002). Most consumers are still quite uncomfortable with the concept of mobile business and they are skeptical whether these businesses are feasible and secure (Siau and Shen, 2003).

Originally meant to connect the world of business, the mobile phone has been increasingly applied by private households and therewith entered the domestic sphere. Accordingly, the mobile phone has changed its identity: it has lost its internal coherence and its connotations of being a mobile technology (Fortunate - 2001). Consumers regard their mobile phone a very private item. Mobile technologies are considered "personal" technologies, attached to a particular body or person (Green, Harper, Murtagh and Cooper, 2001). Consequently, they are very sensitive about receiving messages from unknown persons or organizations. Data control by unknown individuals can easily lead to annoyance among receivers (Whitaker, 2001). Moreover, advertising via electronic communications media like telephone, fax or e-mail is prohibited by law in several Western European countries unless the consumer agrees explicitly to receive the message. Privacy issues are therefore very important when using mobile devices in addressing the consumers.

This calls for application of permission marketing (Kent and Brandal, 2003; Krishnamurthy, 2000; Tezinde, Smith and Murphy, 2002). Before receiving advertising messages via a mobile device, consumers need to empower a marketer to send promotional messages in certain interest categories to them. Typically, this is done by asking the consumer to fill out a survey indicating his or her interest when registering for a service.

After that, the marketer can match advertising messages with the interests of the consumer (Krishnamurthy, 2001). These processes allow a new kind of interactivity, which often leads to marketers collecting, compiling, and using

information about customers (Stewart and Pavlou, 2002).

- Relevance of privacy is negatively correlated with a "positive" attitude toward advertising via Mobile devices.
- Relevance of privacy is negatively correlated with a high advertising value.

Relevant Demographic Variables

Besides the above-mentioned influencing factors that are mainly related to the message and its attributes itself as well as to related privacy issues, we also assume that demographic variables also can affect perceived advertising value and attitude toward advertising.

- **Age**:

Generally, young people are heavy users of mobile services (Dickinger, et al., 2004). For the mobile devices have become as much as a fashion accessory as they are a communication device (Robins, 2003). Younger consumers also show a more favorable attitude toward traditional advertising in a number of dimensions. They like looking at ads and they feel more comfortable when doing so (Shavitt, Lowrey and Haefner, 1998). Not surprisingly, they also show a very positive attitude toward mobile ads, whereas older consumers are also positive about mobile ads, but more prudent (Kaasinen, 2003). Considering these facts we come to the conclusion that younger consumers value advertising messages via mobile devices to a higher extent than older consumers and also show a more positive attitude toward them.

i. Age of the consumer is negatively correlated with a "positive" attitude toward advertising via Mobile devices.
ii. Age of the consumer is negatively correlated with a high advertising value.

- **Gender**:

Gender has shown to be relevant in forming overall attitudes on mobile

phones. Women and men perceive mobile phones and their usage differently (Ozhan Dedeoglu, 2004). Ling reports that the role of the mobile phone differs between genders (Ling, 2001). Generally male consumers show a more favourable attitude toward ads than female consumers (Shavitt, Lowrey and Haefner, 1998).

Since there is so far no research done on the attitude of the genders toward advertising via mobile devices, we can only conclude that there are differences in their attitude toward this form of marketing and its value.

i. Attitudes toward advertising via mobile devices differ between men and women.
ii. Advertising value differs between men and women.

- **Education**:

Ozhan (2004) reports that as educational level increases, the level of negative attitude toward mobile phones increases also. Sarker supports these findings and Wells (2003) who consider economic conditions as an influencing factor on adoption and usage of mobile phones (Sarker and Wells, 2003). Persons with less education and lower income generally report a more favorable attitude toward advertising in general (Shavitt, Lowrey and Haefner, 1998). We therefore conclude that interviewees with a higher level of education show a more negative attitude toward advertising via mobile devices and perceive a lower value.

i. A high level of education is negatively correlated with a "positive" attitude toward advertising via mobile devices.
ii. A high level of education is negatively correlated with a high advertising value.

- **Consumer Behavior and Marketing Strategy:**

The study of consumers helps firms and organizations improve their marketing strategies by understanding issues such as how

i. The psychology of how consumers think, feel, reason, and select between different alternatives (e.g., brands, products);

ii. The psychology of how the consumer is influenced by his or her environment (e.g., culture, family, signs, media);
iii. The behavior of consumers while shopping or making other marketing decisions;
iv. Limitations in consumer knowledge or information processing abilities influence decisions and marketing outcome;
v. How consumer motivation and decision strategies differ between products that differ in their level of importance or interest that they entail for the consumer; and
vi. How marketers can adapt and improve their marketing campaigns and marketing strategies to more effectively reach the consumer.

Understanding these issues helps us adapt our strategies by taking the consumer into consideration. For example, by understanding that a number of different messages compete for our potential customers' attention, we learn that to be effective, advertisements must usually be repeated extensively. We also learn that consumers will sometimes be persuaded more by logical arguments, but at other times will be persuaded more by emotional or symbolic appeals. By understanding the consumer, we will be able to make a more informed decision as to which strategy to employ.

- **Definition of Market Research:**

Market Research is a systematic, objective collection and analysis of data about particular target market, competition, and/or environment. It always incorporates some form of data collection whether it be secondary research (often referred to as desk research) or primary research which is collected direct from a respondent.

The purpose of any market research project is to achieve an increased understanding of the subject matter. With markets throughout the world becoming increasingly more competitive, market research is now on the agenda of many organizations, whether they be large or small.

- **The Market Research Process:**

To conduct market research, organizations may decide to undertake the project themselves (some through a marketing research department) or they might choose to commission it via a market research agency or consultancy. Whichever, before undertaking any research project, it is crucial to define the research objectives i.e. what are you trying to achieve from the research? And what do you need to know?

After considering the objectives, Market Researchers can utilize many types of research techniques and methodologies to capture the data that they require. All of the available methodologies either collect quantitative or qualitative information. The use of each very much depends on the research objectives but many believe that results are most useful when the two methods are combined.

- **Quantitative Research:**

Quantitative research is numerically oriented, requires significant attention to the measurement of market phenomena and often involves statistical analysis. For example, a bank might ask its customers to rate its overall service as excellent, good, poor or very poor. This will provide quantitative information that can be analyzed statistically. The main rule with quantitative research is that every respondent is asked the same series of questions. The approach is very structured and normally involves large numbers of interviews/questionnaires.

Perhaps the most common quantitative technique is the 'market research survey'. These are basically projects that involve the collection of data from multiple cases – such as consumers or a set of products. Quantitative surveys can be conducted by using post (self-completion), face-to-face (in-street or in-home), telephone, and email or web techniques. The questionnaire is one of the more common tools for collecting data from a survey, but it is only one of a wide-ranging set of data collection aids.

- **Qualitative Research:**

Qualitative research provides an understanding of how or why things are as they are. For example, a Market Researcher may stop a consumer who has purchased

a particular type of bread and ask him or her why that type of bread was chosen. Unlike quantitative research there are no fixed set of questions but, instead, a topic guide (or discussion guide) is used to explore various issues in-depth. The discussion between the interviewer (or moderator) and the respondent is largely determined by the respondents' own thoughts and feelings.

As with quantitative techniques, there are also various types of qualitative methodologies. Research of this sort is mostly done face-to-face. One of the best-known techniques is market research group discussions (or focus groups). These are usually made up of 6 to 8 targeted respondents, a research moderator whose role is to ask the required questions, Draw out answers, and encourage discussion, and an observation area usually behind one way mirrors and video and/or audio taping facilities. In addition, qualitative research can also be conducted on a 'one on one' basis i.e. an in-depth interview with a trained executive interviewer and one respondent, a paired depth (two respondents), a triad (three respondents) and a mini group discussion (4-5 respondents).

RESEARCH DESIGN

Title of the Study

"A study on consumer preference towards NOKIA mobile phones in Urban Bangalore"

Statement of the problem

There are many players in the marketplace and due to tough competition; every marketer wants to understand the customer's preference so that they can satisfy them by giving the product or service. Hence, there is a need for proposed study.

Specifically, the research investigation will convey the following focus:

- The study will bring out the extent of consumer satisfaction as a result of their experience.
- The consumer expectations from the mobile phones they are using or

intending to buy.

Objectives of the study

1. To analyze the buying behavior of customers of NOKIA phone.
2. To assess the consumer's expectations towards NOKIA phone.
3. To examine the factors influencing customer's preferences.
4. To estimate the level of consumer satisfaction after using the NOKIA phone.

Scope of the study

The scope of the study is to understand the consumers attitudes towards the different brands in mobile phones and his/her expectations from the product and, then estimate their level of satisfaction after using the product. The study is limited to customer group targeting youth in Bangalore.

Operational definitions of the concepts

GSM: Global System for Mobile communications
CDMA: Code division multiple access
W-CDMA: Wideband Code Division Multiple Access
UMTS: Universal Mobile Telecommunications System
GPS: Global Positioning System
FCC: Federal Communications Commission
NTT: Nippon Telegraph and Telephone, a telephone company that dominates the telecommunication market in Japan
MMS: Multimedia Messaging Service

SMS: Short message service

WAP: Wireless Application Protocol

TDMA: Time division multiple access

RIM: Research in Motion, Ltd. Makers of blackberry.

SIM Card: Subscriber Identity Module

GPRS: General Packet Radio Service

TD-SCDMA: Time Division-Synchronous Code Division Multiple Access is a 3G mobile telecommunications standard, being pursued in the People's Republic of China by the Chinese Academy of Telecommunications Technology (CATT), Datang and Siemens AG, in an attempt not to be "dependent on Western technology".

Research Methodology

The research methodology used is descriptive kind wherein data will be collected through the structured questionnaire and survey method and personal interview.

The target respondents of the survey are the mobile phone users in Bangalore city. The study being qualitative, survey is the focal point. The primary data will be collected through in-depth interview technique with the aid of a structured questionnaire. The choice of this technique is based on the assumption that the responses are relatively true. It is proposed to take a sample of 100 respondents in Bangalore city and to draw the inferences depending upon the data distribution obtained after the survey.

Survey Research

Surveys are best suited for exploratory and descriptive research. Companies should take up surveys to learn about consumers' expectations, tastes and preferences, and their level of satisfaction.

Sampling technique

Simple Random Sampling technique is used. This type of sampling avoids any bias in choosing the sample.

Sample size

The chosen sample size for research is 100. The sample is derived from respondents within Bangalore city.

Sample description

The sample is chosen at random from among a number of respondents.

TOOLS AND TECHNIQUES

The questionnaire technique is used for the survey and the reason for using this approach is.

- It covers wide area
- It is not an expensive affair
- Original data could be obtained
- It is free from all bias
- Easy to tabulate and understand

PLAN OF ANALYSIS

The collected data will be analyses with the help of statistical tools and techniques. Wherever possible to make the presentation effective tables, charts, diagrams and graphs will be used

COLLECTION OF DATA

Data has been collected from both primary and secondary sources.

Primary data is collected using the questionnaires and Secondary data is collected from books, internet, magazines, etc,

LIMITATION OF THE STUDY

1. The study is limited to consumers within Bangalore city.
2. The accuracy of the results or interpretation of the data entirely depends on the sincerity of the sample respondents.
3. The study will be affected due to the vast market and immense competition.
4. The study is undertaken for limited period.
5. The study is purely for academic purpose.

CHAPTER SCHEME

Chapter – 1: INTRODUCTION

This chapter starts with the profile of the industry and with the brief idea regarding the project and it also explains the theoretical background of the study i.e. sources of pleasure and displeasure in service etc.

Chapter – 2: RESEARCH DESIGN

The research design tells us about the research methodology adopted for the study, statement of the problem, scope of the study, objective of the study, sampling method, data collection tool and limitations of the study.

Chapter – 3: COMPANY PROFILE

This chapter has the profile of the company.

Chapter – 4: DATA ANALYSIS AND INTERPRETATION

This chapter contains classification and tabulation of data, analysis and interpretation.

Chapter – 5: SUMMARY OF FINDINGS AND SUGGESTIONS

It has executive summary of dissertation - findings and suggestions.

Chapter – 6: CONCLUSION

Chapter – 7: ANNEXURE

Chapter – 8: BIBLIOGRAPHY

COMPANY PROFILE

Nokia Corporation is a Finnish multinational communications corporation, headquartered in Keilaniemi, Espoo, a city neighbouring Finland's capital Helsinki. Nokia is focused on wireless and wired telecommunications, with 128,445 employees in 120 countries, sales in more than 150 countries and global annual revenue of 50.7 billion Euros and operating profit of 5.0 billion as of 2008. It is the world's largest manufacturer of mobile telephones: its global device market share was about 37% in Q4 of 2008, down from 40% in Q4 2007 and down from 38% sequentially Nokia produces mobile phones for every major market segment and protocol, including GSM, CDMA, and W-CDMA (UMTS). Nokia's subsidiary Nokia Siemens Networks produces telecommunications network equipments, solutions and services.

The Nokia House, Nokia's head office located by the Gulf of Finland in Keilaniemi, Espoo, was constructed between 1995 and 1997. It is the workplace of more than 1,000 Nokia employees

Finns have ranked Nokia many times as the best Finnish brand and employer. The Nokia brand, valued at $35.9 billion, is listed as the fifth most valuable global brand in Interbrand Business Week's Best Global Brands list of 2008 (first non-US company). It is the number one brand in Asia (as of 2007) and Europe (as of 2008), the 23rd most admirable company worldwide in Fortune's World's Most Admired Companies list of 2008 (tied with Exxon Mobil; second in Network Communications, fifth non-US company), and is the world's 88th largest company in Fortune Global 500 list of 2008, up from 119 of the previous year. As of 2008, AMR Research ranks Nokia's global supply chain number two in the world.

Fredrik Idestam, founder of Nokia.

What is known today as Nokia was established in 1865 as a wood-pulp mill by Fredrik Idestam on the banks of the Tammerkoski rapids in the town of Tampere, in southwestern Finland. The company was later relocated to the town of Nokia by the Nokianvirta river, which had better resources for hydropower production. That is where the company got the name that it still uses today. The name *Nokia* originated from the river, which flowed through the town. The river itself, Nokianvirta, was named after the old Finnish word originally meaning a dark, furry animal that was locally known as the nokia, or sable, or later pine marten.

The new company was involved in many sectors, producing at one time or another paper products, bicycle and car tires, footwear (including Wellington boots), personal computers, communications cables, televisions, electricity generation machinery, capacitors, aluminium, but the company focused on telecommunications after the notable drop in the prices of paper in Europe.

Historical logos

Nokia Company logo. Founded in Tampere in 1865, incorporated in Nokia in 1871.

Nokia – Finnish Rubber Works Ltd, founded in Helsinki in 1898.
Logo 1965–1966.

The Nokia "arrows" logo before its Connecting People logo.

Nokia introduced its "Connecting People" advertising slogan, coined by Ove Strandberg.

Nokia's current logo with the redesigned "Connecting People" slogan.

Nokia Siemens Networks logo. Founded in 2007.

History of Nokia

Nokia's first century: 1865-1967

The first Nokia century began with Fredrik Idestam's paper mill on the banks of the Nokianvirta river. Between 1865 and 1967, the company would become a major industrial force; but it took a merger with a cable company and a rubber firm to set the new Nokia Corporation on the path to electronics...

1865: The birth of Nokia

Fredrik Idestam establishes a paper mill at the Tammerkoski Rapids in southwestern Finland, where the Nokia story begins.

1898: Finnish Rubber Works founded

Arvid Wickström founds Finnish Rubber Works, which will later become Nokia's rubber business.

1912: Finnish Cable Works founded

Eduard Polón starts Finnish Cable Works, the foundation of Nokia's cable and electronics businesses.

1937: Verner Weckman, industry heavyweight

Former Olympic wrestler Verner Weckman becomes President of Finnish Cable Works.

1960: First electronics department

Cable Works establishes its first electronics department, selling and operating computers.

1962: First in-house electrical device

The Cable Works electronics department produces its first in-house electrical device - a pulse analyzer for nuclear power plants.

1967: The merger

Nokia Ab, Finnish Rubber Works and Finnish Cable works formally merge to create Nokia Corporation.

The move to mobile: 1968-1991

The newly formed Nokia Corporation was ideally positioned for a pioneering role in the early evolution of mobile communications. As European telecommunications markets were deregulated and mobile networks became global, Nokia led the way with some iconic products...

1979: Mobira Oy, early phone maker

Radio telephone company Mobira Oy begins life as a joint venture between Nokia and leading Finnish television maker Salora.

1981: The mobile era begins

Nordic Mobile Telephone (NMT), the first international mobile phone network, is built.

1982: Nokia makes its first digital telephone switch

The Nokia DX200, the company's first digital telephone switch, goes into operation.

1984: Mobira Talkman launched

Nokia launches the Mobira Talkman portable phone.

1987: Mobira Cityman – birth of a classic

Nokia launches the Mobira Cityman, the first handheld NMT phone.

1991: GSM – a new mobile standard opens up

Nokia equipment is used to make the world's first GSM call.

Mobile revolution: 1992-1999

In 1992, Nokia decided to focus on its telecommunications business. This was probably the most important strategic decision in its history.

As adoption of the GSM standard grew, new CEO Jorma Ollila put Nokia at the head of the mobile telephone industry's global boom – and made it the world leader before the end of the decade...

1992: Jorma Ollila becomes President and CEO

Jorma Ollila becomes President and CEO of Nokia, focusing the company on telecommunications.

1992: Nokia’s first GSM handset

Nokia launches its first GSM handset, the Nokia 1011.

1994: Nokia Tune is launched

Nokia launches the 2100, the first phone to feature the Nokia Tune.

1994: World’s first satellite call

The world’s first satellite call is made, using a Nokia GSM handset.

1997: Snake – a classic mobile game

The Nokia 6110 is the first phone to feature Nokia’s Snake game.

1998: Nokia leads the world

Nokia becomes the world leader in mobile phones.

1999: The Internet goes mobile

Nokia launches the world's first WAP handset, the Nokia 7110.

Nokia now: 2000-today

Nokia’s story continues with 3G, mobile multiplayer gaming, multimedia devices and a look to the future...

2002: First 3G phone

Nokia launches its first 3G phone, the Nokia 6650.

2003: Nokia launches the N-Gage

Mobile gaming goes multiplayer with the N-Gage.

2005: The Nokia Nseries is born

Nokia introduces the next generation of multimedia devices, the Nokia Nseries.

2005: The billionth Nokia phone is sold

Nokia sells its billionth phone – a Nokia 1100 – in Nigeria. Global mobile phone subscriptions pass 2 billion.

2006: A new President and CEO – Nokia today

Olli-Pekka Kallasvuo becomes Nokia's President and CEO; Jorma Ollila becomes Chairman of Nokia's board. Nokia and Siemens announce plans for Nokia Siemens Networks.

2007

Nokia recognized as 5th most valued brand in the world. Nokia Siemens Networks commences operations. Nokia launches Ovi, its new internet services brand.

2008

Nokia's three mobile device business groups and the supporting horizontal groups are replaced by an integrated business segment, Devices & Services.

Board of Directors

Nokia Board of Directors consists of the following ten members:

Chairman of the Board of Directors, Nokia Corporation.

Jorma Ollila

- **Chairman of the Board of Directors of Royal Dutch Shell Plc.**
- **Board member since 1995.**
- **Chairman since 1999.**

Vice Chairman

Dame Marjorie Scardino

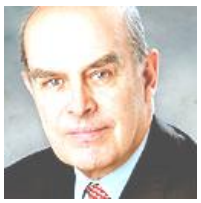
- **Board member since 2001.**
- **Chairman of the Corporate Governance and Nomination Committee.**
- **Member of the Personnel Committee.**

President and CEO of Nokia Corporation.

Olli-Pekka Kallasvuo

- **Group Executive Board member since 1990.**
- **Group Executive Board Chairman as since June 1, 2006.**
- **With Nokia 1980-81, rejoined 1982**
- **Member of the Nokia Board of Directors since May 3, 2007.**

Other Members of the Board.



Georg Ehrnrooth

Lalita D. Gupte

Dr. Bengt Holmström

Prof. Dr. Henning Kagermann

Per Karlsson

Risto Siilasmaa

Keijo Suila

The operations of the company are managed under the direction of the Board of Directors, within the framework set by the Finnish Companies Act, Nokia's Articles of Association and the complementary Corporate Governance Guidelines and related charters adopted by the Board.

The responsibilities of the Board of Directors

The Board represents and is accountable to the shareholders of the company. The Board's responsibilities are active, not passive, and include the responsibility regularly to evaluate the strategic direction of the company, management policies and the effectiveness with which management implements them, and assesses the overall risk of the company. The Board's responsibilities further include overseeing the structure and composition of the company's top management and monitoring legal compliance and the management of risks related to the company's operations.

The Board has the responsibility for appointing and discharging the Chief Executive Officer and the other members of the Group Executive Board. The Chief Executive Officer also acts as President, and his rights and responsibilities include those allotted to the President under Finnish law. Subject to the requirements of Finnish law, the independent directors of the Board confirm the compensation and the employment

conditions of the Chief Executive Officer upon the recommendation of the Personnel Committee.

The basic responsibility of the members of the Board is to act in good faith and with due care so as to exercise their business judgment on an informed basis in what they reasonably and honestly believe to be the best interests of the company and its shareholders. The Board and each Committee also have the power to hire independent legal, financial or other advisors, as they deem necessary. The Board conducts annual performance self-evaluations, which also include evaluations of the Committees' work, the results of which are discussed by the Board.

Election, composition and meetings of the Board of Directors

Pursuant to the articles of association, Nokia Corporation has a Board of Directors composed of a minimum of seven and a maximum of twelve members. The members of the Board are elected for a term of one year at each Annual General Meeting, i.e., from the close of that Annual General Meeting until the close of the following Annual General Meeting, which convenes each year by June 30. The Annual General Meeting held on May 8, 2008 elected ten members to the Board of Directors.

The Board elects a Chair and a Vice Chair from among its members for a one-year term. On May 8, 2008, the Board resolved that Jorma Ollila should continue to act as Chair and that Marjorie Scardino shall act as Vice Chair of the Board. The Board also appoints the members and the chairpersons for its Committees from among its non-executive, independent members for a one-year term.

The current members of the Board are all non-executive, except the President and Chief Executive Officer who is also a member of the Board. The non-executive Board members are all independent as defined under Finnish rules and regulations, except the Chairman of the Board who acted as Chairman and Chief Executive Officer until June 1, 2006. In January 2008, the Board determined that seven of the Board's ten members are

independent, as defined in the New York Stock Exchange's corporate governance listing standards, as amended in November 2004. In addition to the Chairman of the Board and the President and Chief Executive Officer, Bengt Holmström was determined not to be independent under the NYSE standards due to a family relationship with an executive officer of a Nokia supplier of whose consolidated gross revenue from Nokia accounts for an amount that exceeds the limit provided in the NYSE listing standards, but that is less than 5%. Also in January 2008, the Board determined that Georg Ehrnrooth, Chairman of the Audit Committee, was a financial expert within the meaning of the Sarbanes-Oxley Act of 2002 and the subsequent regulations by the US Securities and Exchange Commission.

Nokia in Asia Pacific

A leading player in mobile communications in the Asia Pacific, Nokia first started operations in the region in the early 1980s. It has since established a leading brand presence in many local markets, and business has expanded considerably in all areas to support customer needs and the growth of the telecommunications industry in the region.

Nokia's regional corporate headquarters is located at Alexandra Technopark in Singapore. As the regional hub for Nokia, it is a base from which over 700 staff provide leading-edge technology, product and solutions support to the 20 diverse markets and Nokia offices in the Asia Pacific.

Nokia's regional treasury center - Nokia Treasury Asia - operates out of Singapore as an in-house bank for Nokia subsidiaries in the Asia Pacific region, while Nokia Research Centre - the corporate research unit - has offices in Japan and China. Nokia also manufactures products out of three major facilities in Masan, Korea, and Beijing and Dongguan in China.

As of January 2004, Nokia streamlined its global organizational structure to strengthen its focus on convergence, new mobility markets and growth. To address emerging new business areas in the Mobility era while continuing to grow its leadership in mobile voice

communications, Nokia has four business groups to best meet the unique dynamics of each business.

Mobile Phones offers a global range of highly competitive mobile phones for large consumer segments, and develops mobile phones for all major standards and customer segments in over 130 countries. It is responsible for Nokia's core mobile phones business, based mainly on WCDMA, GSM, CDMA and TDMA technologies.

Multimedia brings mobile multimedia to consumers in the form of advanced mobile devices and applications. Its products have features and functionality such as imaging, games, music, media and a range of other attractive content, as well as innovative mobile enhancements and solutions.

Networks continue to offer leading-edge network infrastructure, technology and related services, based on major wireless standards to mobile operators and service providers. Focusing on the GSM family of technologies, the group aims at leadership in GSM, EDGE and WCDMA radio networks.

Enterprise Solutions provides a range of terminals and seamless mobile connectivity solutions based on end-to-end mobility architecture, dedicated to helping businesses and institutions worldwide improve their performance through extended mobility. Its end-to-end solution offerings range from business optimized mobile devices on the front end, to a robust portfolio of mobile business optimized gateways in the back end

Nokia's senior executives in the Asia Pacific

Alex Lambeek
Vice President,
Sales and Market Operations
Mobile Phones, Asia Pacific

Jose-Luis Martinez
Area Vice President
Nokia Networks
Asia Pacific

Urpo Karjalainen
Senior Vice President
Customer and Market Operations
Asia Pacific

Mathia Nalappan
Vice President
Enterprise Solutions, Asia-Pacific

Mauro Montanaro
Vice President,
Customer and Market Operations

Southeast Asia Pacific

Nokia's senior executives in India

D. Shivakumar
Vice President, Sales,
Mobile Phones
India

Vineet Taneja
Country Head-
GTM Nokia
Nokia India

Shankar Subramanian
Director Operator Accounts
Nokia India Limited

Bimal Rath
Head - HR
Nokia India

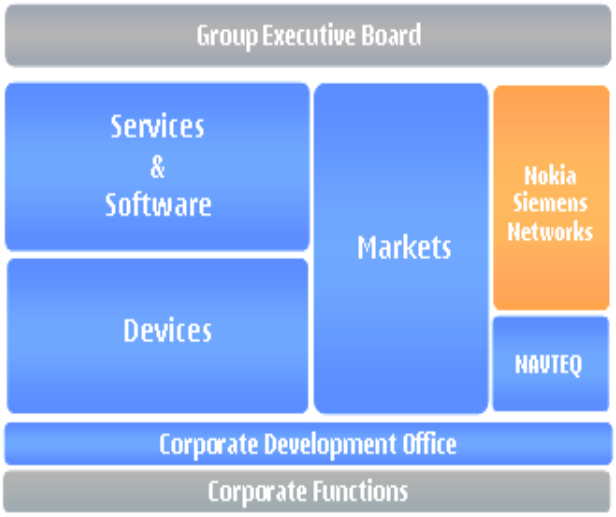
Poonam Kaul
Director, Communications
Nokia India

Ambrish Bakaya
Director, Corporate Affairs
Nokia India

Ajay Vasudeva
Director, S60 and Head of R&D Bangalore
Nokia India

Sachin Saxena
Director, Chennai Factory
Nokia India

Nokia Organization Structure



• Devices is responsible for developing the best device portfolio for the marketplace, including sourcing of components

• Services & Software reflects our strategic emphasis on developing and growing our offering of consumer Internet services and enterprise solutions and software

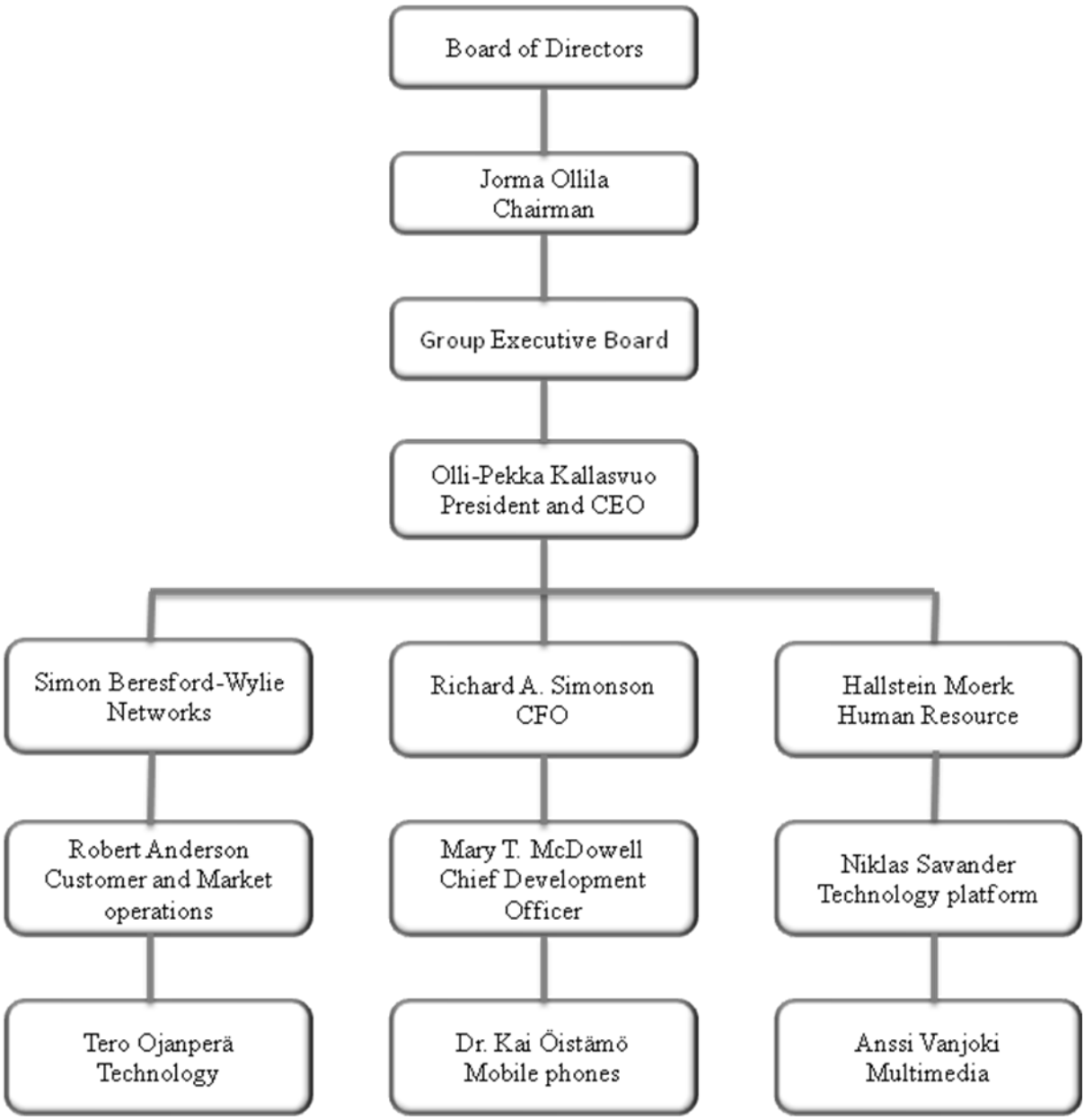
• Markets is responsible for management of our supply chains, sales channels, and brand & marketing activities

• The Corporate Development Office focuses on our strategy and future growth, and provides operational support for integration across all the units.

• Our infrastructure and related services business is conducted through Nokia Siemens Networks, a separate company jointly owned by Nokia and Siemens and consolidated by Nokia.

• NAVTEQ is a leading provider of comprehensive digital map data for automotive navigation systems, mobile navigation devices, Internet-based mapping applications, and government and business solutions.

Organization Chart



Production units

Mobile Devices and Enhancements

Brazil
China
Finland
Great Britain
Hungary
India
Mexico
Romania
South Korea

Networks Technology

China
Finland
India

Nokia Offices

Nokia Head Office

Keilalahdentie 2-4
P.O. Box 226
FIN-00045 Nokia Group
Finland
Tel. +358 (0) 7180 08000
Fax. +358 7180 38226

Regional Head Offices

Nokia Corporate Office - New York
102 Corporate Park Drive
10604 WHITE PLAINS
New York
USA
Tel: +1 914 368 0400

Nokia Corporate Office
6000 Connection Drive
Irving, Texas
75039
USA
Tel. +1 972 894 5000

Nokia Asia-Pacific
438B Alexandra Road
#07-00 Alexandra Technopark
SINGAPORE 119968
Tel. +65 6723 2323

Nokia MEA
Al Thuraya Tower II
27th floor, Dubai Internet City DUBAI
Tel. +971 4 3697600
Fax +971 4 369760

Business operations

Nokia has played a pioneering role in the growth of cellular technology in India, starting with the first-ever cellular call a decade ago, made on a Nokia mobile phone over a Nokia-deployed network.

Nokia started its India operations in 1995, and presently operates out of offices in New Delhi, Mumbai, Kolkata, Jaipur, Lucknow, Chennai, Bangalore, Hyderabad, Pune and Ahmedabad. The Indian operations comprise of the handsets business; R&D facilities in Bangalore, Hyderabad and Mumbai; a manufacturing plant in Chennai and a Design Studio in Bangalore.

Over the years, the company has grown manifold with its manpower strength increasing from 450 people in the year 2004 to over 15000 employees in March 2008 (including Nokia Siemens Networks). Today, India holds the distinction of being the second largest market for the company globally.

Devices business

Nokia has established itself as the market and brand leader in the mobile devices market in India. The company has built a diverse product portfolio to meet the needs of different consumer segments and therefore offers devices across five categories i.e. Entry, Live, Connect, Explore and Achieve. These include products that cater to first time subscribers to advanced business devices and high performance multimedia devices for imaging, music and gaming.

Nokia has been working closely with operators in India to increase the geographical coverage and lower the total cost of ownership for consumers. Today, Nokia has one of the largest distribution network with presence across 1,30,000 outlets. In addition, the company also has Nokia Priority Dealers across the country and Nokia ‘Concept stores’ in Bangalore, Delhi, Jaipur, Hyderabad, Chandigarh, Ludhiana, Chennai, Indore and Mumbai to provide customers a complete mobile experience.

Services business

With the global launch of Ovi, the company's Internet services brand name, Nokia is renewing itself to be at the forefront of the convergence of internet and mobility. From being a product centric company, Nokia is now focusing to become solutions centric. The strategic shift is built on Nokia's bid to retain consumers and empower Nokia device owners to realize the full potential of the Internet. Nokia will build a suite of Internet based services like Nokia Maps, the Nokia Music Store and Nokia N-Gage around its Ovi brand.

Infrastructure business

Nokia Siemens Networks is a leading global enabler of communications services. The company provides a complete, well-balanced product portfolio of mobile and fixed network infrastructure solutions and addresses the growing demand for services with 20,000 service professionals worldwide. Its operations in India include Sales & Marketing, Research & Development, Manufacturing and Global Networks Solutions Centre. Headquartered in Gurgaon, Nokia Siemens Networks has 47 offices and presence in over 170 locations across the country.

R & D centers

Nokia has three Research & Development centers in India, based in Hyderabad, Bangalore and Mumbai. These R&D hubs are staffed by engineers who are working on next-generation packet-switched mobile technologies and communications solutions to enhance corporate productivity.

Of the three, the Bangalore R&D centre is the largest Nokia site in India. It was established in 2001 with the acquisition of Amber Networks. Over the years it has played a pivotal role in the development of new applications, software platforms and chipsets for high-end Nokia mobile devices. On the chipset side the work done in India is mainly in the area of ASIC design, hardware design, integration and verification, protocol software design and integration, speech and video codec design and integration.

The facility today houses over 1200 employees across all teams namely S60, Devices R&D, S&S operations and other enabling functions. The vision of the centre is to be the

most R&D centre globally by driving operational excellence and innovation in hardware, software and internet services with great sense of pride.

Design Studio

Nokia has set up its first Design Studio in Bangalore in partnership with Srishti School of Art, Design and Technology. The first of its kind, the design studio will give Nokia designers and India's talented youth the opportunity to work together on new design ideas for India and the global markets.

Manufacturing in India

Nokia has set up its mobile device manufacturing facility in Chennai, India to meet the burgeoning demand for mobile devices in the country. The manufacturing facility is operational with an investment of USD 210 million and currently employs 8000 people. Nokia has recently announced fresh investments to the tune of US $ 75 million towards its manufacturing plant in Sriperumbudur, Chennai for the year 2008.

Some firsts for Nokia in India

1995 – First mobile phone call made in India on a Nokia phone on a Nokia network

1998 - Saare Jahaan Se Acchhaa, first Indian ringtone in a Nokia 5110

2000 - First phone with Hindi menu (Nokia 3210)

2002 - First Camera phone (Nokia 7650)

2003 - First Made for India phone, Nokia 1100

2004 - Saral Mobile Sandesh, Hindi SMS on a wide range of Nokia phones

2004 - First Wi-fi Phone- Nokia Communicator (N9500)

2005 – Local UI in additional local language

2006 – Nokia manufacturing plant in Chennai

2007 – First vernacular news portal

Some Achievements for Nokia

- Ranked No 1 Most Trusted Brand Survey by Brand Equity, 2008
- Ranked the No 1. MNC in India by Business world, India's leading business weekly, 2006
- Ranked as the No. 1 telecommunications equipment vendor in the country by Voice & Data for five consecutive years –2008, 2007, 2006,2005 and 2004
- Ranked as the 9th most powerful brand by Millward Brown's BrandZ 2008
- Ranked world's 4th most valuable brand by Interbrand, 2007
- Ranked Asia's most trusted brand by the Media-Synovate, 2006
- Nokia unveils online software store 'Ovi' on **February 16, 2009**

Products of Nokia

Nokia has established itself as the market and brand leader in the mobile devices market in India. The company has built a diverse product portfolio to meet the needs of different consumer segments and therefore offers devices across five categories i.e. Entry, Live, Connect, Explore and Achieve. These include products that cater to first time subscribers to advanced business devices and high performance multimedia devices for imaging, music and gaming.

Some of the products offered by Nokia:

Entry category

Nokia 1202

Nokia 1200

Live category

Nokia 5130 XpressMusic

Nokia 5800 XpressMusic

Connect category

Nokia 6208 classic

Nokia 6220 classic

Explore category

Nokia N96

Nokia N82

Achieve category

Nokia E90

Nokia E71

Market share

As on June 16, 2008

Mobile phone giant Nokia's market share in India has increased to 62.5 per cent in 2007-08 from 53.6 per cent in the previous year, according to a survey by Voice & Data.

Nokia's revenues from the mobile phone segment stood at Rs 15,000 crore (RS 150 billion), up by 30.6 per cent, compared to Rs 11,486

Crore (Rs 114.86 billion) in 2006-07. The Finnish company's increased market share seems to have come from the LG, Motorola and other players who have lost significant share.

The market leader is followed by Sony Ericsson and Samsung at second and third place with 12.8 per cent and 6.2 per cent market share, respectively. Although LG also has the same market share as Samsung, it has lost revenue by 37 per cent, the study stated.

India's telecom equipment revenue touched Rs 95,407 crore (Rs 954.07 billion) in 2007-08 driven by the rising demand for mobile handsets and wireless infrastructure expansion by service providers.

In telecom equipment, Ericsson had revenue of Rs 8,000 crore (Rs 80 billion). Nokia Siemens Network, the merged entity between Nokia and Siemens had revenue of Rs 7,779 crore (Rs 77.79 billion) and Alcatel Lucent posted revenues of Rs 7,000 crore (Rs 70 billion).

"While Nokia and Ericsson retained their positions as the top players, Nokia Siemens Networks, struck major deals in the wireless segment. Expansion of mobile networks and broadband infrastructure and the introduction of 3G technology, will sustain the growth in the current year," the report.

Out of the total revenue of Rs 95,407 crore, handset business was Rs 24,000 crore (Rs 240 billion), it added.

According to the V&D survey, over half of the telecom equipment revenue came from carrier equipment manufacturers, which grew by 32 per cent to touch Rs 56,994 crore (Rs

569.94 billion) during the year. The enterprise equipment industry grew at 27 per cent to report revenues of Rs 13,210 crore (Rs 132.1 billion).

The phone segment, contributed nearly one-fourth to the total telecom equipment industry, at Rs 25,203 crore (Rs 252.03) recording a growth of 7 per cent.

In the handset segment, revenues of mobile handset manufacturer grew 12 per cent to Rs 24,003 crore (Rs 240.03 billion), while the fixed handset sales decreased by 41 per cent to Rs 1,200 crore (Rs 12 billion), over the same period last year.

The Indian handset market recorded a 33 per cent growth by volume with 95.6 million pieces sold during the year against 71.8 million in the same period in the previous year.

Of the total handsets sold, 68.3 million were GSM phones and 27.3 million phones are based on CDMA technology. The GSM handsets sales reported a growth of 34 per cent compared to a 28 per cent for CDMA phones.

Some competitors of Nokia in India

Future of Nokia Mobile Phones

The Morph concept

If you have accidentally felt that you may be riding the tech wave with your super latest high tech gadget, Nokia might just be able to prove you wrong.

Launched alongside The Museum of Modern Art "Design and The Elastic Mind" exhibition, on view from February 24 to May 12, 2008, the Morph concept device is a bridge between highly advanced technologies and their potential benefits to end-users. This device concept showcases some revolutionary leaps being explored by Nokia Research Center (NRC) in collaboration with the Cambridge Nanoscience Centre (United Kingdom) – nanoscale technologies that will potentially create a world of radically different devices that open up an entirely new spectrum of possibilities.

Morph concept technologies might create fantastic opportunities for mobile devices:

- Newly-enabled flexible and transparent materials blend more seamlessly with the way we live
- Devices become self-cleaning and self-preserving
- Transparent electronics offering an entirely new aesthetic dimension
- Built-in solar absorption might charge a device, whilst batteries become smaller, longer lasting and faster to charge
- Integrated sensors might allow us to learn more about the environment around us, empowering us to make better choices

Flexible & Changing Design

Nanotechnology enables materials and components that are flexible, stretchable, transparent and remarkably strong. Fibril proteins are woven into a three dimensional mesh that reinforces thin elastic structures. Using the same principle behind spider silk,

this elasticity enables the device to literally change shapes and configure itself to adapt to the task at hand.

A folded design would fit easily in a pocket and could lend itself ergonomically to being used as a traditional handset. An unfolded larger design could display more detailed information, and incorporate input devices such as keyboards and touch pads.

Self-Cleaning

Nanotechnology also can be leveraged to create self-cleaning surfaces on mobile devices, ultimately reducing corrosion, wear and improving longevity. Nanostructured surfaces, such as “Nanoflowers” naturally repel water, dirt, and even fingerprints utilizing effects also seen in natural systems.

Advanced Power Sources

Nanotechnology holds out the possibility that the surface of a device will become a natural source of energy via a covering of “Nanograss” structures that harvest solar power. At the same time new high energy density storage materials allow batteries to become smaller and thinner, while also quicker to recharge and able to endure more charging cycles.

Sensing the Environment

Nanosensors would empower users to examine the environment around them in completely new ways, from analyzing air pollution, to gaining insight into bio-chemical traces and processes. New capabilities might be as complex as helping us monitor evolving conditions in the quality of our surroundings, or as simple as knowing if the fruit we are about to enjoy should be washed before we eat it. Our ability to tune into our environment in these ways can help us make key decisions that guide our daily actions and ultimately can enhance our health.

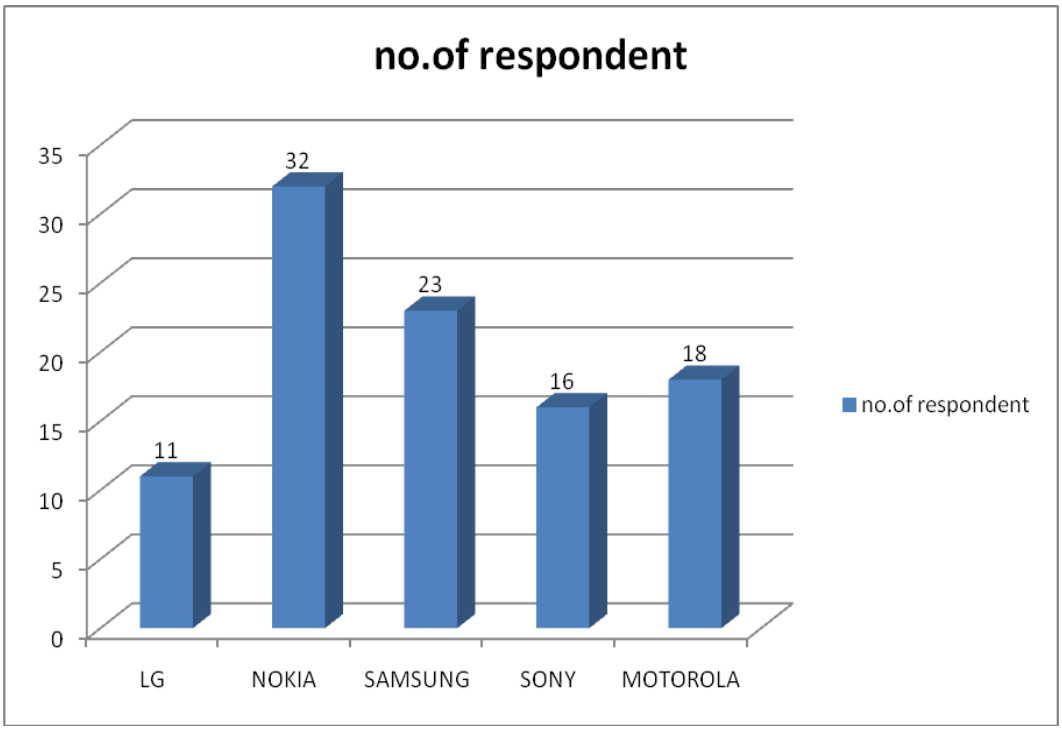
DATA ANALYSIS AND INTERPRETATION

1. Brand currently used by the respondent

T1-Table showing brand currently used by the respondent

Brands	No. of Respondents	Percentage
LG	11	11.0
Nokia	32	32.0
Samsung	23	23.0
Sony	16	16.0
Motorola	18	18.0
Total	**100**	**100.0**

G1-Graph showing brand currently used by the respondent



INFERENCE: It is been observed that majority of the respondents use Nokia i.e. 32%. 23% are using Samsung, 18% are using Motorola , 16% are using Sony and a small percentage of respondents are interested in using LG.

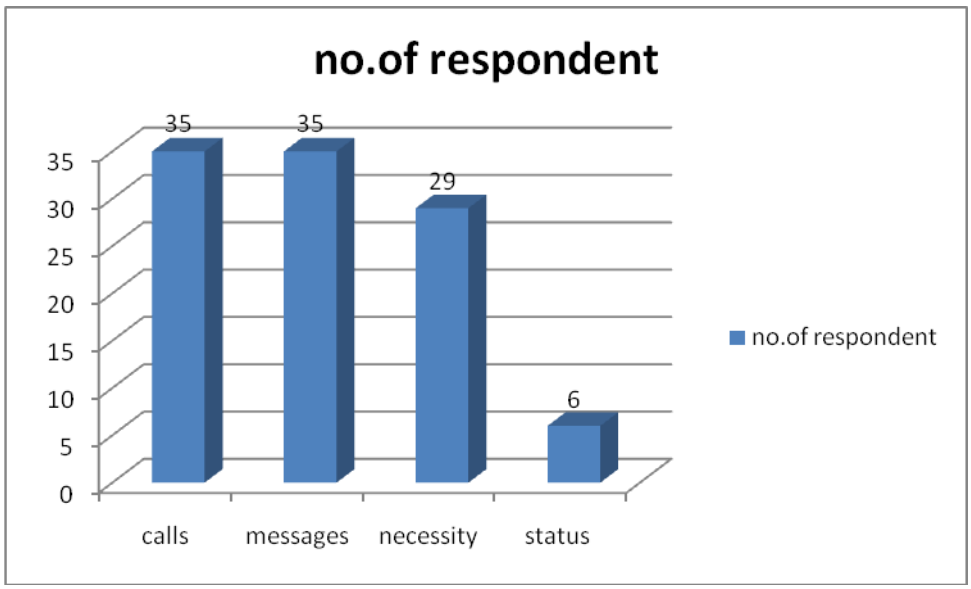
2. The first thing that comes to the mind of the consumer when he

hears the word 'Mobile Phone'.

T2 –Table showing consumer 'mind set'

Particulars	No. of Respondents	Percentage
Calls	30	30.0
Messages	35	35.0
Necessity	29	29.0
Status Good	6	6.0
Total	**100**	**100.0**

G2-Graph showing consumer 'mind set'



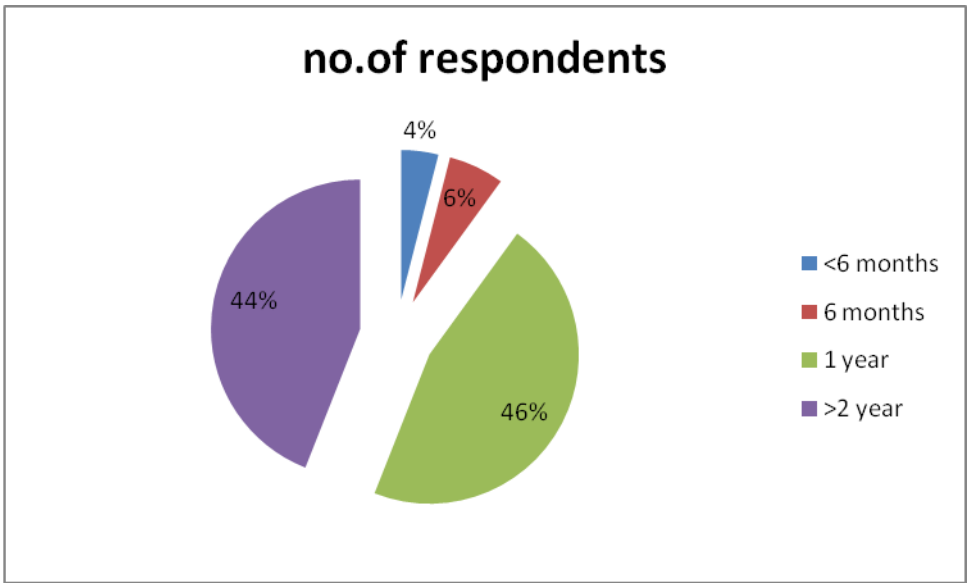
INFERENCE: It is been observed that most of the respondents mindset is on messages more than the calls, the necessity factor is augmented because of the availability of handsets on installments and low interest rates. For top-level executives, it is certainly a status symbol. For many others it is a necessity and for a few it is a pride.

3. Frequency of changing the handset

T3- Table showing frequency of changing the handset

	No. of Respondents	Percentage
<6 months	4	4.0
6 months	6	6.0
1 year	46	46.0
> 2 years	44	44.0
Total	**100**	**100.0**

G3 –Graph showing frequency of changing the handset



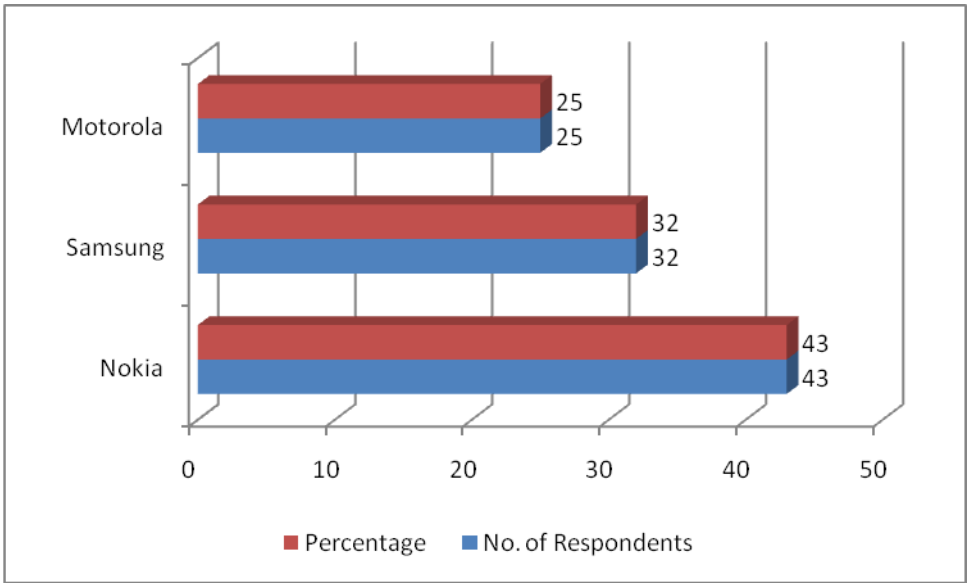
INFERENCE: It is been observed that 46% of the respondents change their handset after 1 year and 44% of them change after 2 years and 6% of them after 6 months and 4% before 6 months.

4. Top Brand that is most preferred by the consumers

T4-Table showing consumers' top preferred brand

Brands	No. of Respondents	Percentage
Nokia	43	43.0
Samsung	32	32.0
Motorola	25	25.0
Total	**100**	**100.0**

G4 – Graph showing consumer's top preferred brand



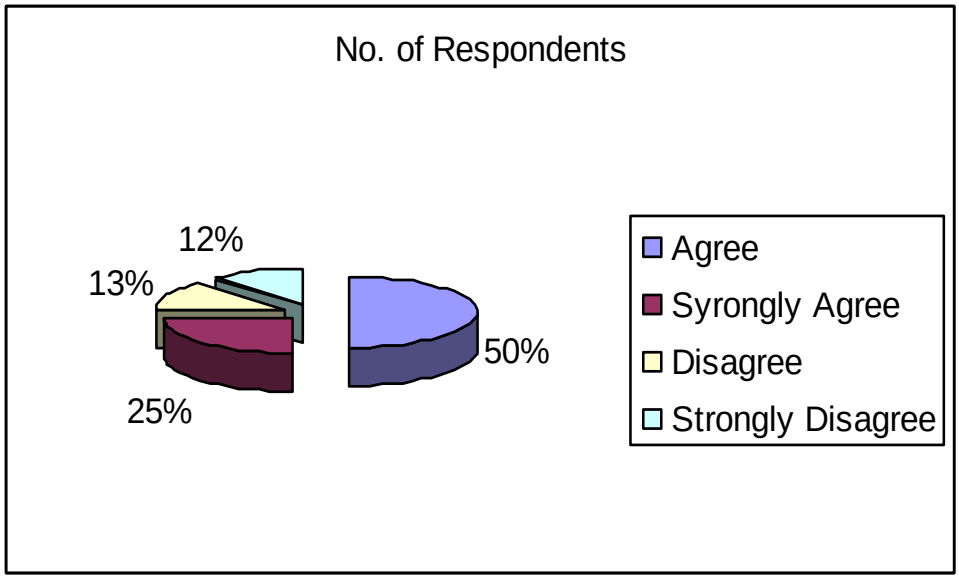
INFERENCE: It is been observed that 43% of the respondents prefer Nokia as the top brand, 32% of them feel Samsung as their top preferred brand and Motorola is preferred by 25% of the respondents as their top brand.

5. Consumers' opinion about NOKIA as a leading brand

T5-Table showing consumers' views about NOKIA

Views	No. of Respondents	Percentage
Agree	50	50.0
Strongly Agree	25	25.0
Disagree	13	13.0
Strongly Disagree	12	12.0
TOTAL	**100**	**100.0**

G5-Graph showing Consumers' views about NOKIA



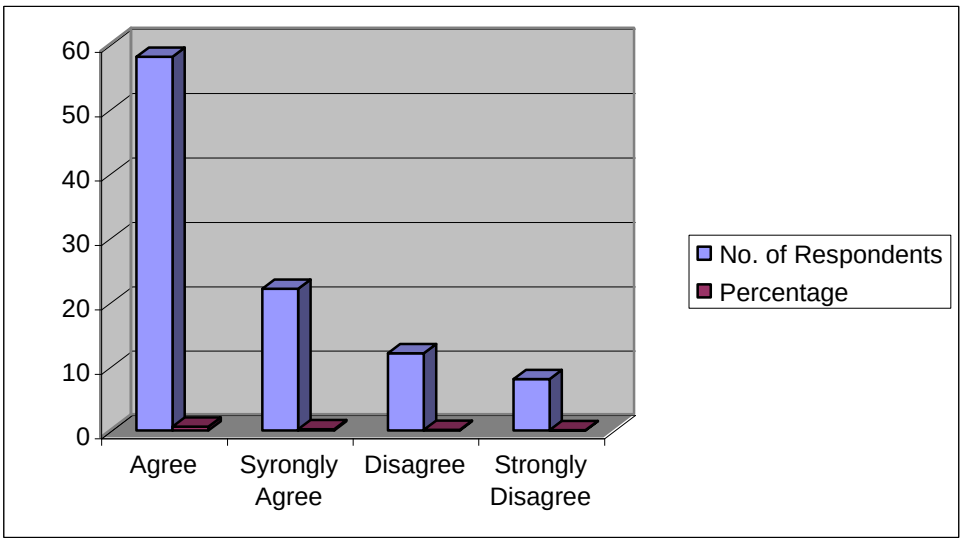
INFERENCE: It has been observed that 50% of the respondents agree NOKIA as the leading brand and 25% of them strongly agree NOKIA as the leading brand. 13% of the respondents disagree NOKIA as the leading brand and 12% of them strongly disagree NOKIA as the leading brand.

6. Consumers' opinion towards NOKIA as a user-friendly

T6-Table showing NOKIA as a user-friendly handset

Views	No. of Respondents	Percentage
Agree	58	58.0
Strongly Agree	22	22.0
Disagree	12	12.0
Strongly Disagree	8	8.0
TOTAL	**100**	**100.0**

G6-Graph showing NOKIA as a user-friendly handset



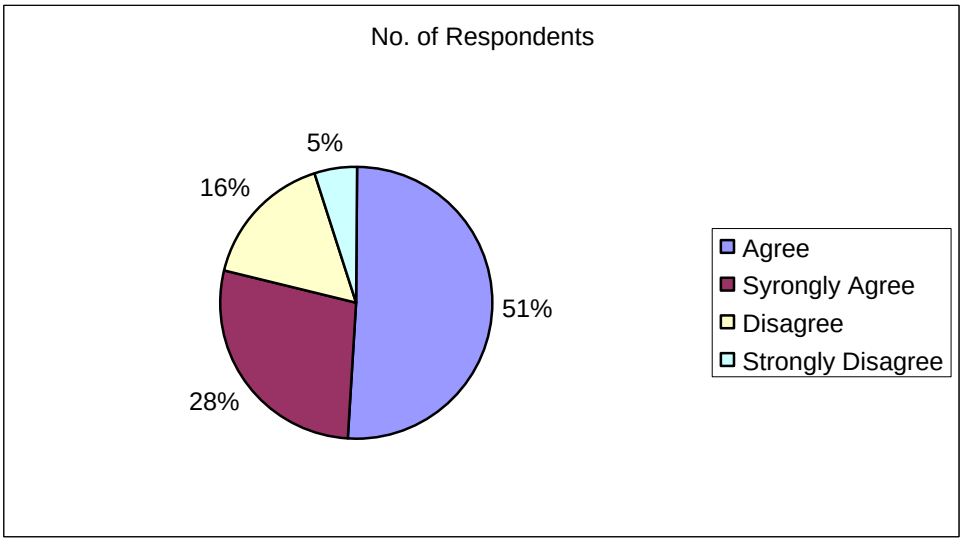
INFERENCE: It has been observed that 58% of the respondents agree NOKIA handsets are user-friendly and 22% of them strongly agree NOKIA handsets are user-friendly. 12% of the respondents disagree NOKIA handsets are user-friendly and 8% of them strongly disagree NOKIA handsets are user-friendly.

7. Owning NOKIA handset is a style symbol

T7-Table showing consumers view on NOKIA handset as a style symbol

Views	No. of Respondents	Percentage
Agree	51	51.0
Strongly Agree	28	28.0
Disagree	16	16.0
Strongly Disagree	5	5.0
TOTAL	**100**	**100.0**

G7- Graph showing consumers view on NOKIA handset as a style symbol



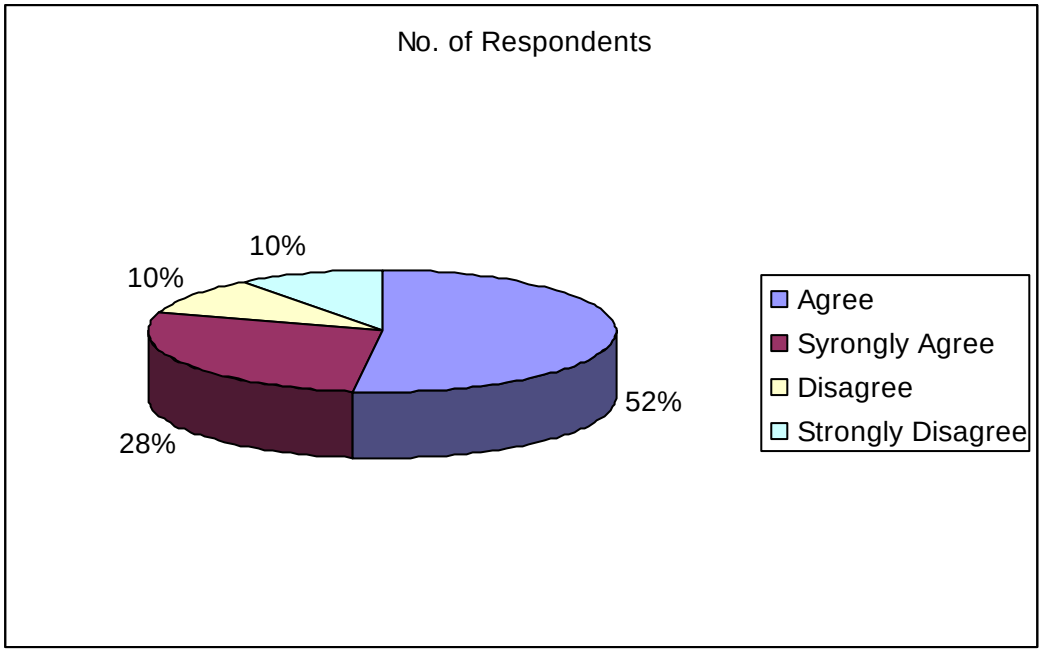
INFERENCE: It has been observed that 51% of the respondents agree that owning NOKIA handsets is a style symbol and 28% of them strongly agree that owning NOKIA handsets is a style symbol. 16% of the respondents disagree and 5% of them strongly disagree that owning NOKIA handsets is a style symbol.

8. <u>Nokia handsets are highly priced</u>

T8-Table showing consumers' attitude towards price

Views	No. of Respondents	Percentage
Agree	52	52.0
Strongly Agree	28	28.0
Disagree	10	10.0
Strongly Disagree	10	10.0
TOTAL	**100**	**100.0**

G8-Graph showing consumers' attitude towards price



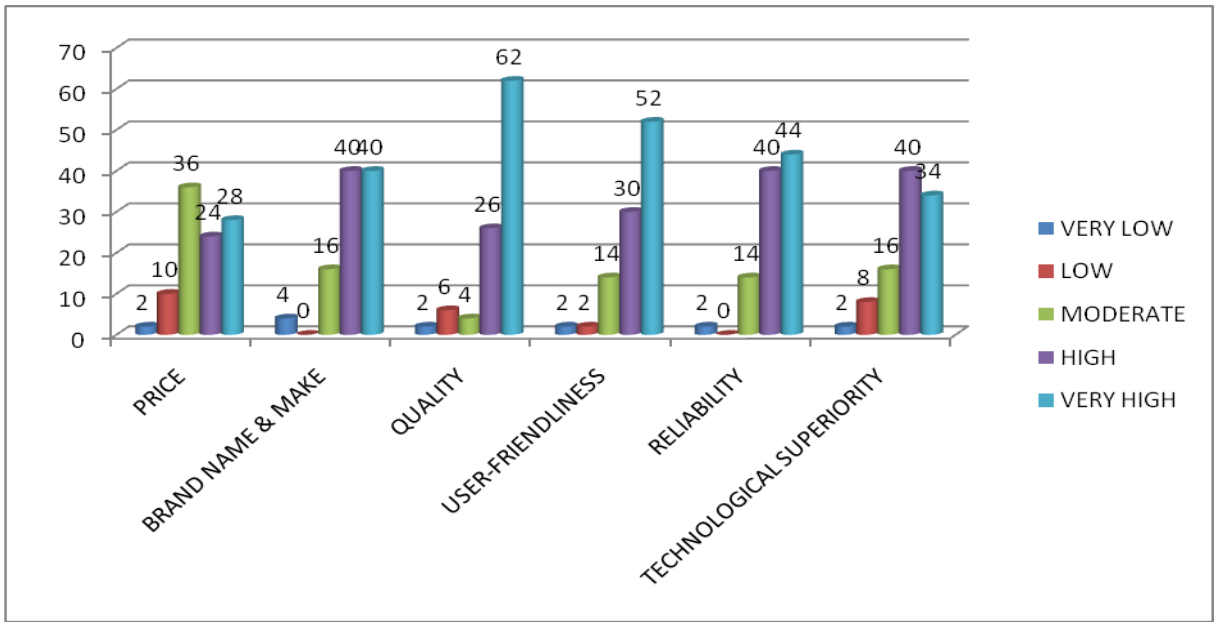
INFERENCE: It has been observed that 52% of the respondents agree that NOKIA handsets are highly priced and 28% of them strongly agree that NOKIA handsets are highly priced. 10% of them disagree and 10% of them strongly disagree that NOKIA handsets are highly priced.

9. Consumers' rating on the various parameters they take into account while purchasing a mobile phone

T9-Table showing rating different parameters

Parameter	Price	Brand name &make	Quality	User-friendliness	Reliability	Technological Superiority
Very low	2	4	2	2	2	2
Low	10	0	6	2	0	8
Moderate	36	16	4	14	14	16
High	24	40	26	30	40	40
Very high	28	40	62	52	44	34
TOTAL	**100**	**100**	**100**	**100**	**100**	**100**

G9-Graph showing rating different parameters



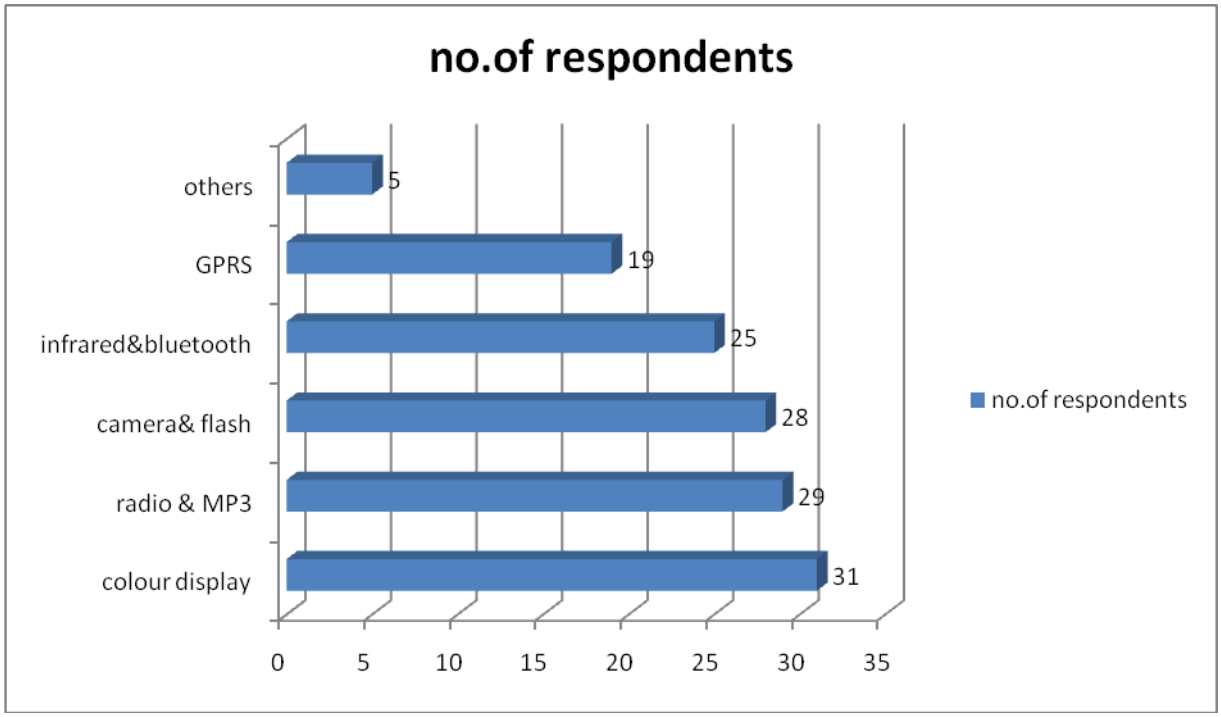
INFERENCE: It can be observed from the above given data that most of the consumers in the process of selecting a handset give importance for quality and user-friendliness i.e. 62% and 52% respectively. They give importance to reliability, technological superiority and brand name and make as moderate. Consumers are aware that, when they expect more or better features, they must be prepared to pay more price and that is how price is the least preferred factor.

10. The features that are most preferred by the Mobile phone users

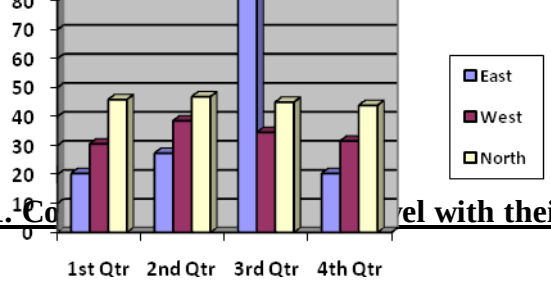
T10-Table showing features preferred by the consumer

Features	No. Of Respondents	Percentage
Colour display	31	31%
Radio& MP3	29	29%
Camera	28	28%
Infra red & Blue tooth	25	25%
GPRS	19	19%
Others	5	5%
TOTAL	**100**	**100%**

G10-Graph showing features preferred by the consumer



INFERENCE: It has been observed that 31% of the respondents prefer colour display, 29% of them prefer radio and MP3, 28% prefer camera, 25% prefer infrared and blue-tooth, 19% prefer GPRS and 5% of the respondents prefer other features when planning to buy another handset.

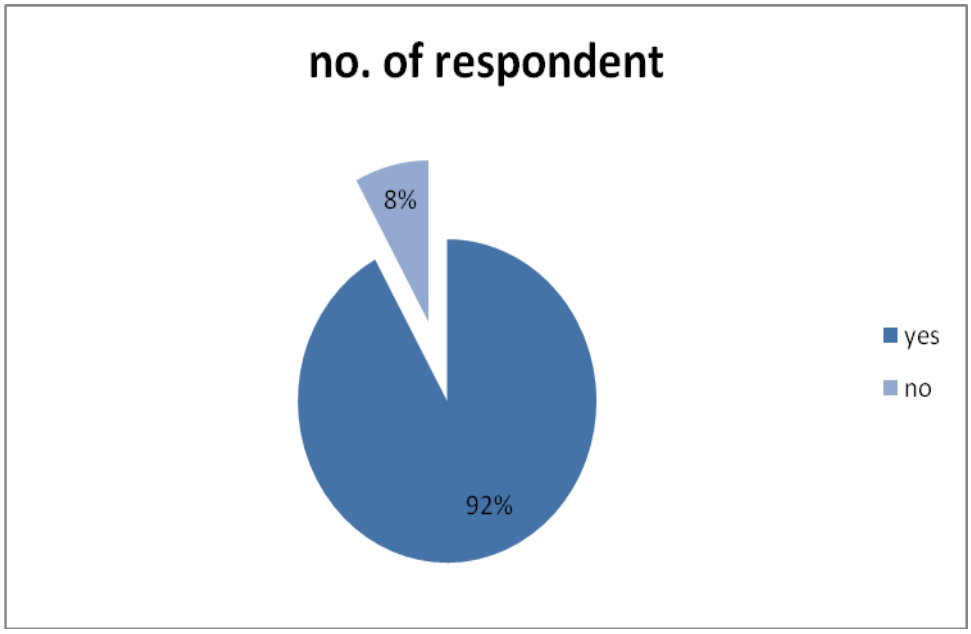


11. Co[illegible]el with their present handset

T11–Table showing consumers' satisfaction level

Particulars	No. of Respondents	Percentage
Yes	92	92.0
No	8	08.0
Total	**100**	**100.0**

G11-Graph showing consumer's satisfaction level



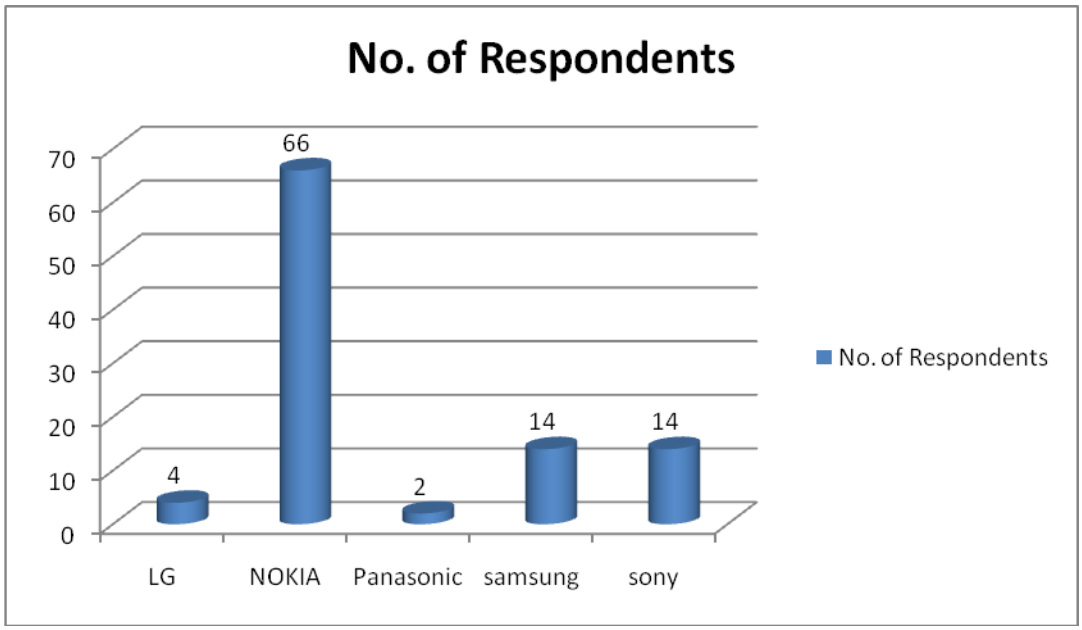
INFERENCE: It can be observed from the above data that 92% of the respondents are satisfied with their present handsets and 8% of them are not satisfied with the same.

12. The handset that the consumers would prefer buying in future

T12 –Table showing other handset preference

Brands	No. of Respondents	Percentage
LG	4	4.0
Nokia	66	66.0
Panasonic	2	2.0
Samsung	14	14.0
Sony	14	14.0
Total	**100**	**100.0**

G12 –Graph showing other handset preference



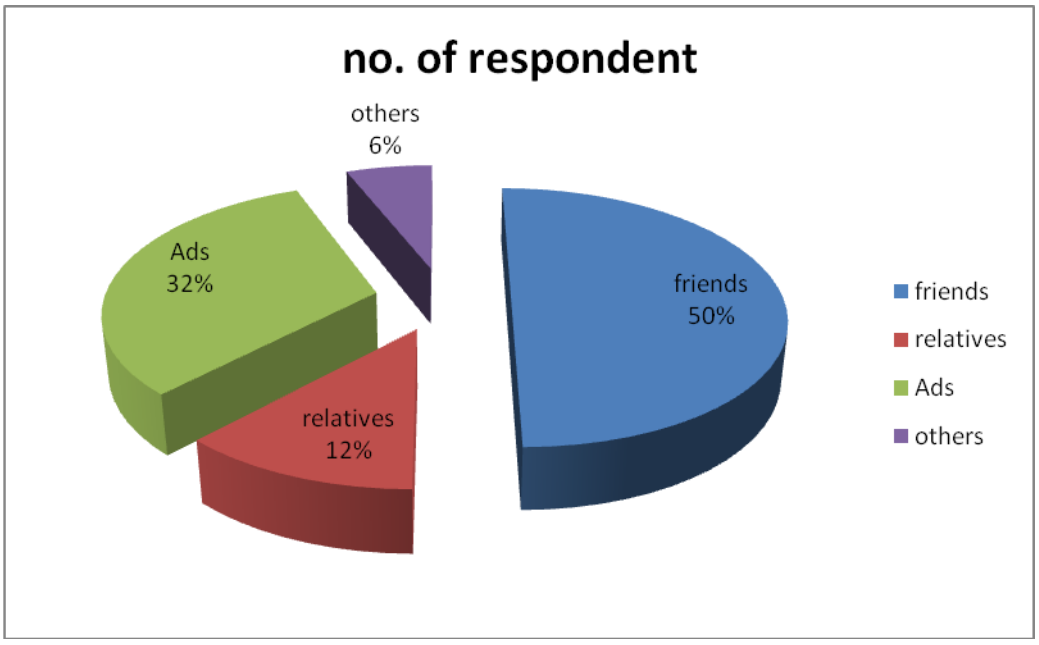
INFERENCE: It can be observed from the above data that 66% of the respondents would prefer NOKIA to buy in the future, 14% each prefer Samsung and Sony, 4% of them prefer LG and 2% Panasonic.

13. Medium for consumers' awareness about their handset

T13 –Table showing Source of awareness

SOURCES	No. of respondents	Percentage
Friends	50	50.0
Relatives	12	12.0
Ads	32	32.0
Others	6	6.0
Total	**100**	**100.0**

G13-Graph showing source of awareness



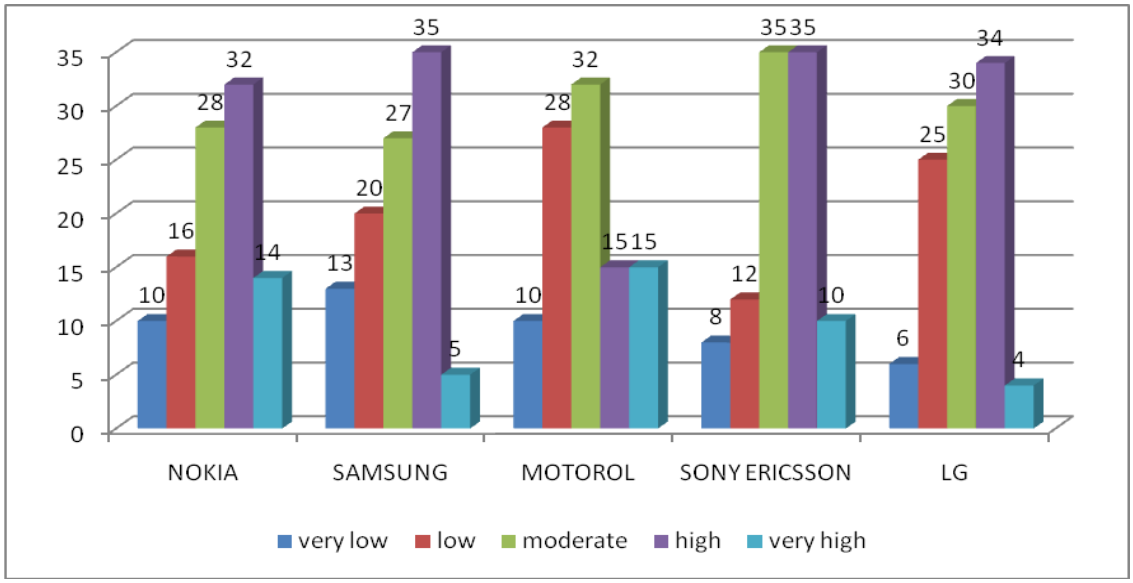
INFERENCE: It can be observed from the above data that 50% of the respondents medium of awareness about their handsets was through friends, 32% through advertisements, 12% from relatives and 6% from other medium.

14. Consumers' attitude about their Ability to pay for the below listed brands of mobile phones

T14-Table showing consumers attitude for 'Ability to pay'

Ranks	Nokia	Samsung	Motorola	Sony Ericsson	LG
Very low	10	13	10	8	6
Low	16	20	28	12	25
Moderate	28	27	32	35	30
High	32	35	15	35	34
Very high	14	5	15	10	4
Total	**100**	**100**	**100**	**100**	**100**

G14-Graph showing consumers attitude for 'Ability to pay'



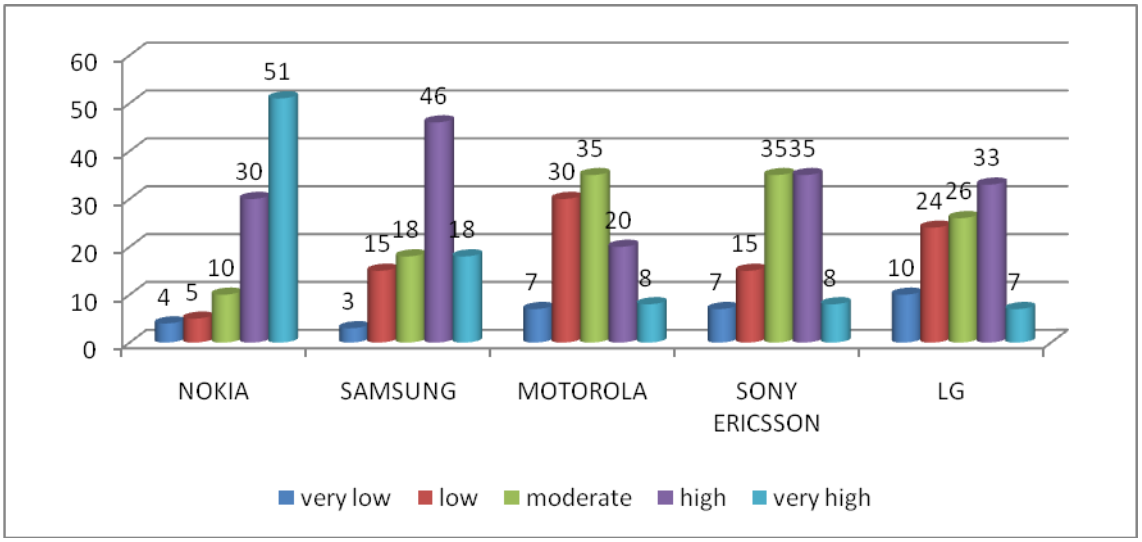
INFERENCE: It can be observed from the above given data that the consumers generally have a high and moderate ability to pay for the different mobile phone brands. It shows that most of the brands are placed at an optimum price. Even quite a number of respondents have mentioned that they have a very high ability to pay for these brands. People saying that they have either a very low or low ability to pay are very few.

15. Consumers' attitude about the Brand name and Make of some of the top brands of mobile phone

T15-Table showing brand name and Makes

Ranks	Nokia	Samsung	Motorola	Sony Ericsson	LG
Very low	4	3	7	7	10
Low	5	15	30	15	24
Moderate	10	18	35	35	26
High	30	46	20	35	33
Very high	51	18	8	8	7
Total	**100**	**100**	**100**	**100**	**100**

G15 –Graph showing brand name and Make



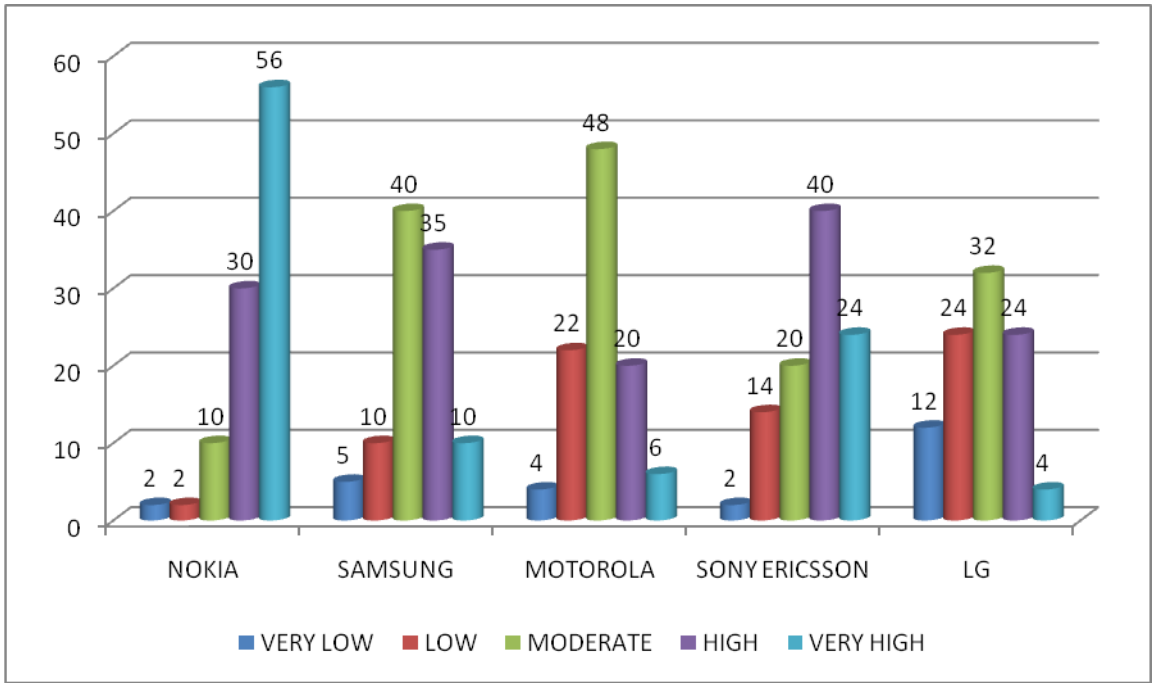
INFERENCE: It can be observed from the above data that most of the respondents felt that Nokia has a very good Brand name and make i.e. about 51% of them felt so. They felt that the other brands normally have a moderate Brand name and make.

16. Consumers' attitude about the Quality of some of the major mobile phone brands

T16-Table showing consumers attitude about the quality

Ranks	Nokia	Samsung	Motorola	Sony Ericsson	LG
Very low	2	5	4	2	12
Low	2	10	22	14	24
Moderate	10	40	48	20	32
High	30	35	20	40	24
Very high	56	10	6	24	4
Total	**100**	**100**	**100**	**100**	**100**

G16-Graph showing consumers attitude about the quality



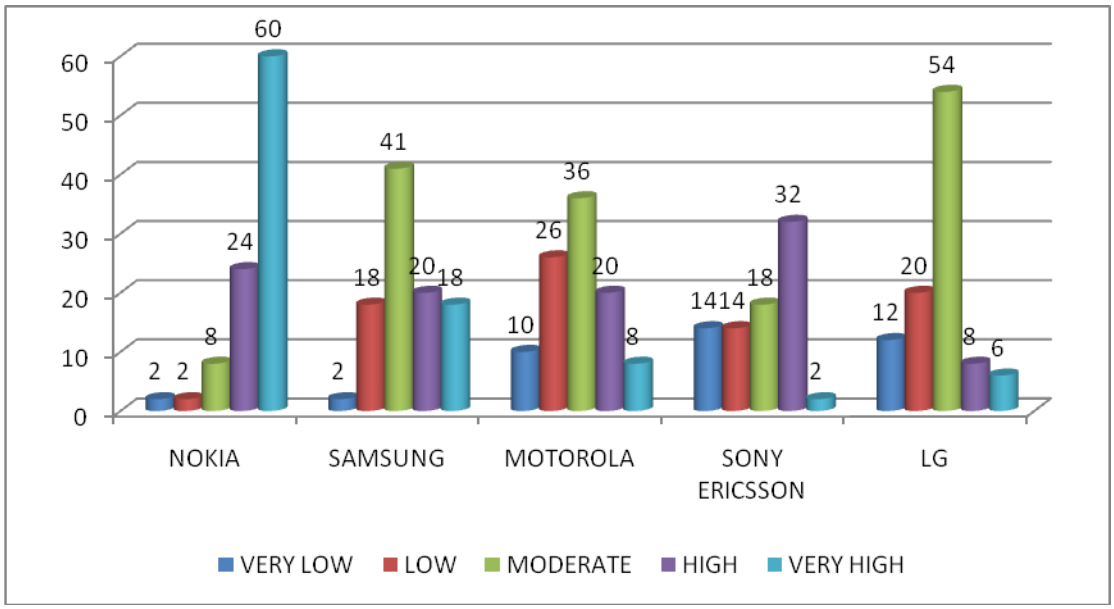
INFERENCE: It can be observed from the above data that most of the respondents felt that Nokia has a very good quality i.e. about 56% of them felt so. They felt that the other brands normally have a moderate quality i.e., Sony Ericsson about 24%, Samsung around 10%, Motorola and LG about 6 and 4 respectively.

17. Consumers' attitude about the User - Friendliness of some of the major mobile phone brands

T17-Table showing consumer's attitude about the user-friendliness

Ranks	Nokia	Samsung	Motorola	Sony Ericsson	LG
Very low	2	2	10	14	12
Low	2	18	26	14	20
Moderate	8	41	36	18	54
High	24	20	20	32	8
Very high	60	18	8	2	6
Total	**100**	**100**	**100**	**100**	**100**

G17-Graph showing consumers' attitude about the user-friendliness



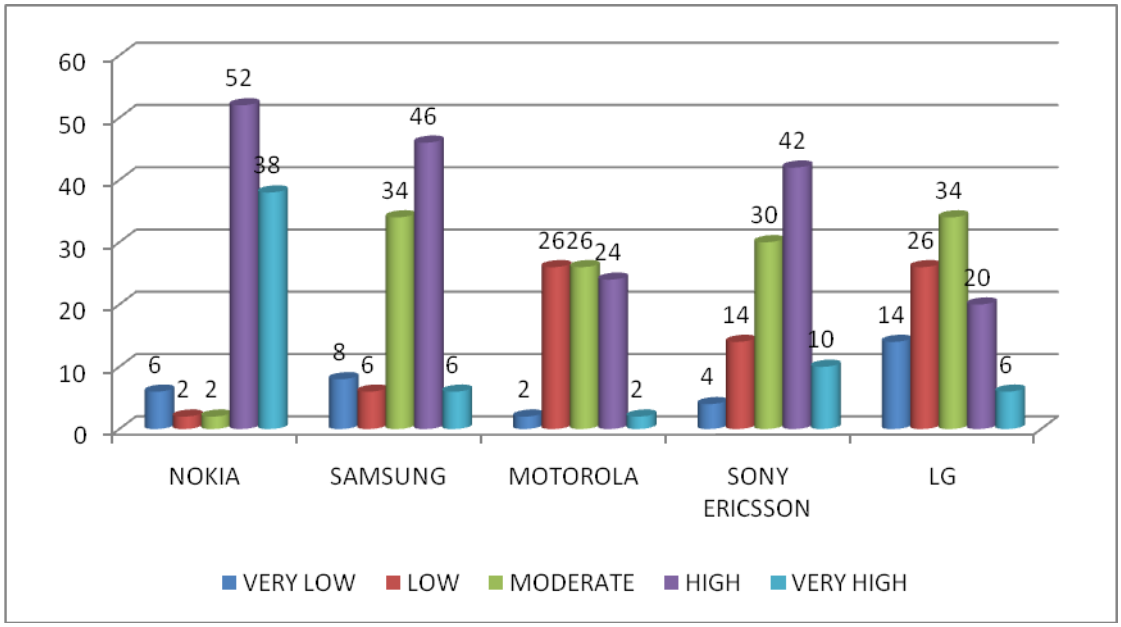
INFERENCE: It can be observed from the above data that Nokia is more user- friendly when compared to the other brands. 60% of the respondents felt so. They feel that the user-friendliness of the other brands is quite moderate and not exceptional. People prefer using phones that are user-friendly so that anybody can easily operate.

18. Consumers' attitude about the Reliability of some of the major mobile phone brands

T18- Table showing consumers' attitude about the Reliability

Ranks	Nokia	Samsung	Motorola	Sony Ericsson	LG
Very low	6	8	2	4	14
Low	2	6	26	14	26
Moderate	2	34	26	30	34
High	52	46	24	42	20
Very high	38	6	2	10	6
Total	**100**	**100**	**100**	**100**	**100**

G18- Graph showing consumers' attitude about the Reliability



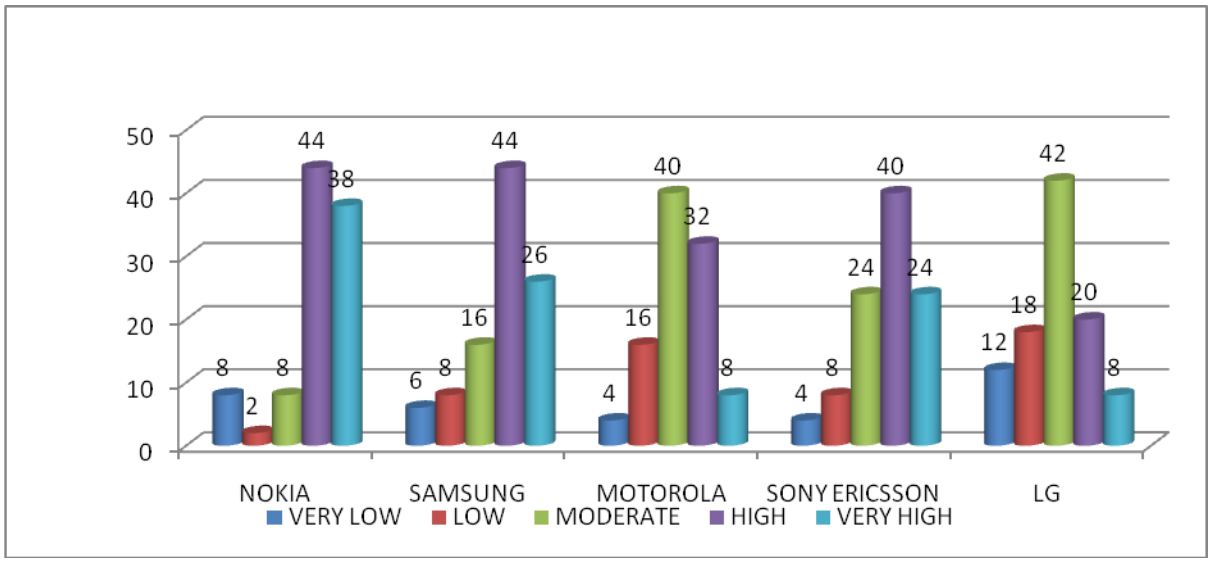
INFERENCE: It is been observed that majority of the respondents feel that Nokia is highly reliable i.e. 52%. 38% feels that Nokia's reliability is very high. Around 46% of the respondents feel that Samsung is also highly reliable. Regarding the reliability of Sony Ericsson, LG and Motorola, they feel that is either moderate or low.

19. Consumers' attitude about the Technological Superiority of some of the major mobile phone brands

T19-Table showing consumers' attitude about the Technological superiority

Ranks	Nokia	Samsung	Motorola	Sony Ericsson	LG
Very low	8	6	4	4	12
Low	2	8	16	8	18
Moderate	8	16	40	24	42
High	44	44	32	40	20
Very high	38	26	8	24	8
Total	**100**	**100**	**100**	**100**	**100**

G19-Graph showing consumers' attitude about the Technological superiority



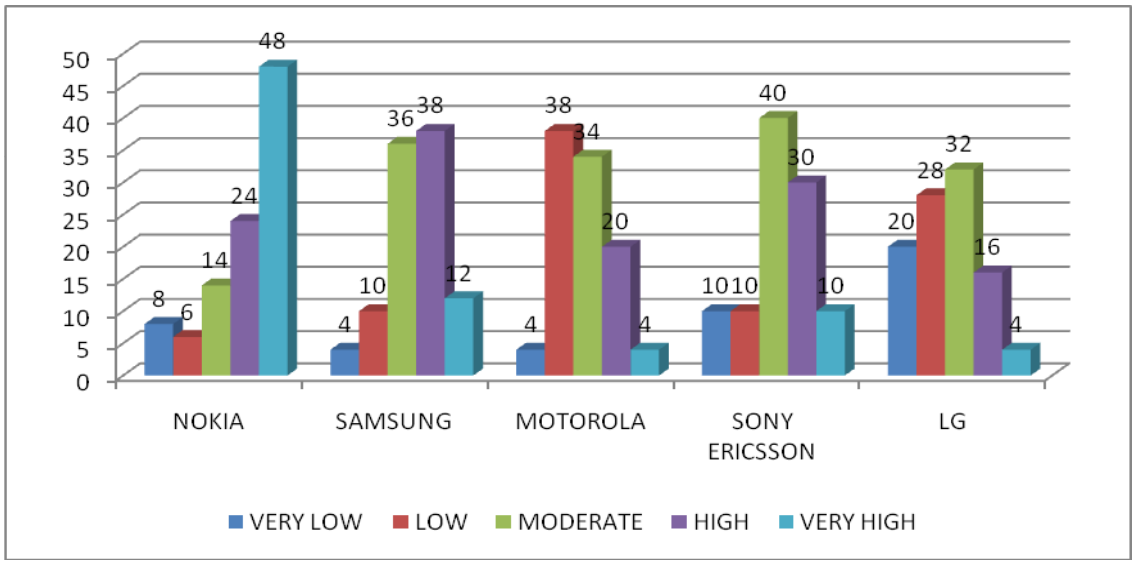
INFERENCE: It can be observed from the data that about 44% of the respondents feel that both Nokia and Samsung have got a highly superior technology when compared to others which the respondents felt has a moderately superior technology. 38% feels that Nokia has got a very high superior technology. That is why it has become the most preferred brand.

20. Consumers' attitude about the Pride of some of the major mobile phone brands

T20-Table showing Consumers' attitude about the Pride about the major brands

Ranks	Nokia	Samsung	Motorola	Sony Ericsson	LG
Very low	8	4	4	10	20
Low	6	10	38	10	28
Moderate	14	36	34	40	32
High	24	38	20	30	16
Very high	48	12	4	10	4
Total	**100**	**100**	**100**	**100**	**100**

G20-Graph showing Consumers' attitude about the Pride about the major brands



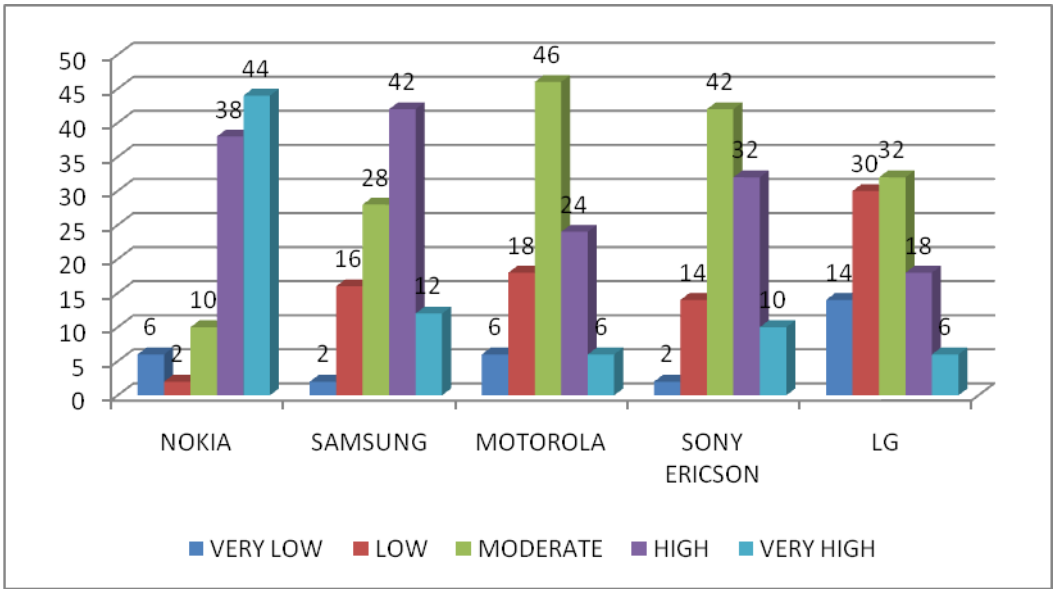
INFERENCE: It can be observed from the above data that almost 48% of the respondents feel that owning a Nokia handset is a matter of very high Pride. 38% feels that Samsung handset brings about a sense of Pride in you. Most of them have rated owning a Motorola or a Sony Ericsson or an LG phone as a matter of Moderate pride. With this, the need for cell phones increased and today it is considered as an item of possession, even for students and professionals.

21. Consumers' attitude about the Utility of some of the major mobile phone brands

T21-Table showing Consumers' attitude about the Utility of the major brands

Ranks	Nokia	Samsung	Motorola	Sony Ericsson	LG
Very low	6	2	6	2	14
Low	2	16	18	14	30
Moderate	10	28	46	42	32
High	38	42	24	32	18
Very high	44	12	6	10	6
Total	**100**	**100**	**100**	**100**	**100**

G21-Graph Table showing Consumers' attitude about the Utility of the major brands



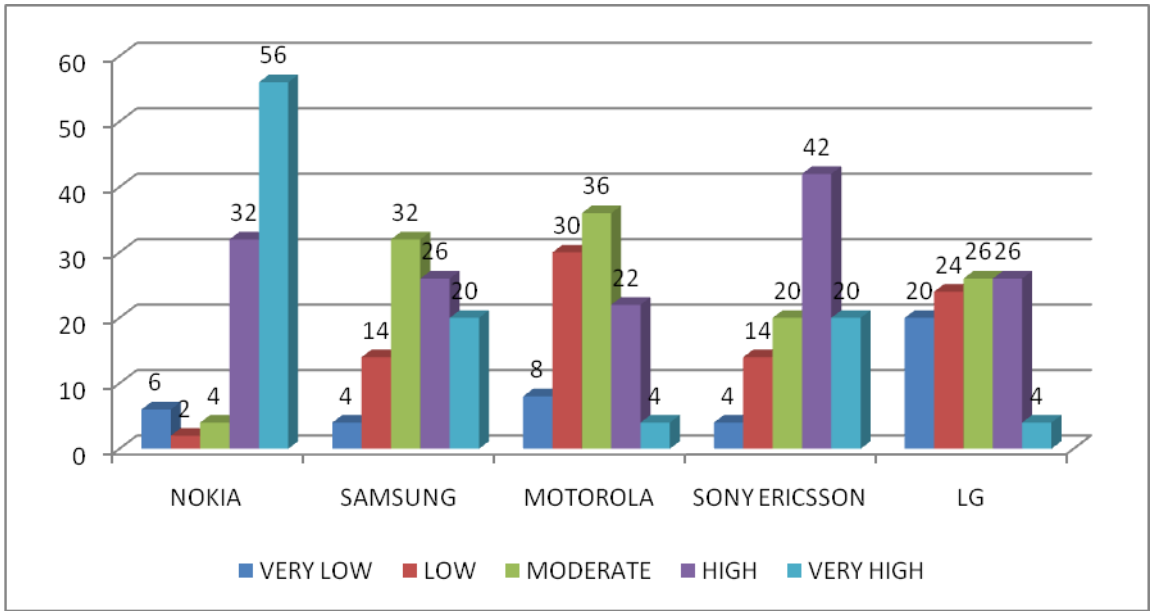
INFERENCE: It can be observed from the above data that 44% of the respondents have rated the Utility of Nokia phones as very high and about 38% have rated it high. 42% of them feel that Samsung handsets are highly useful and around 46% feels that the utility of Motorola is moderate. Most of them have rated the utility of other brands to be moderate.

22. Consumers' attitude about the Brand Power of some of the major mobile phone brands

T22–Table showing Consumers' attitude about the Brand Power of some of the major brands

Ranks	Nokia	Samsung	Motorola	Sony Ericsson	LG
Very low	6	4	8	4	20
Low	2	14	30	14	24
Moderate	4	32	36	20	26
High	32	26	22	42	26
Very high	56	20	4	20	4
Total	**100**	**100**	**100**	**100**	**100**

G22-Graph showing Consumers' attitude about the Brand Power some of the major brands



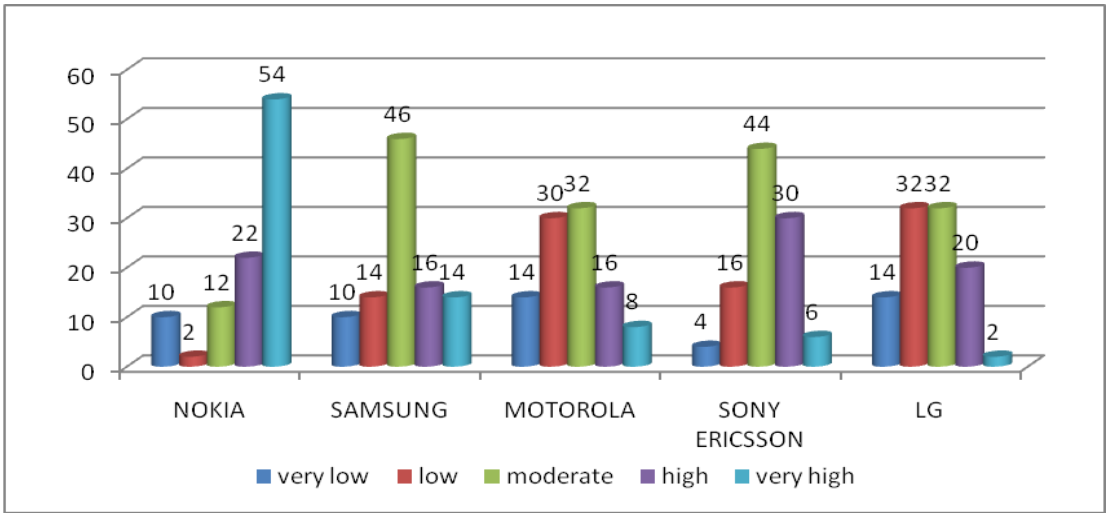
INFERENCE: It can be observed that 56% of the respondents felt that Nokia has got a very high Brand Power when compared to its competitors. Most of them have rated the Brand power of other brands as either high or moderate.

23. Consumers' attitude about the Spread Effect of some of the major mobile phone brands

T23-Table showing consumers' attitude about the Spread Effect of some of the major brands

Ranks	Nokia	Samsung	Motorola	Sony Ericsson	LG
Very low	10	10	14	4	14
Low	2	14	30	16	32
Moderate	12	46	32	44	32
High	22	16	16	30	20
Very high	54	14	8	6	2
Total	**100**	**100**	**100**	**100**	**100**

G23- Graph showing consumers' attitude about the Spread Effect of some of the major brands



INFERENCE: It can be observed from the data that 54% of the respondents feel Nokia has got a very high spread effect when compared to others which they felt have got a moderate spread effect. This shows the strong brand affinity of Nokia and continuous use of Nokia as the preferred choice.

FINDINGS

Following are the findings after analysis of the collected data.

1. Consumers, who decide to buy a cell phone for the first time, prefer to go in for Nokia phones because of the availability in a wide range of variety and price ranges. It can be found from the study that consumers are more inclined towards Nokia mobile phones than Samsung and Sony. This shows the strong brand affinity and continues use of Nokia as the preferred choice.

2. Consumers consider mobile phones as something very necessary and indispensable in their lives. They use it as the most important means of communication. Some people find cell phones as a status symbol and something they can be proud of.

3. A time period of 6 months to 1 year appears to be reasonable the life cycle of a mobile phone for many manufacturers. Although many consumers prefer to change the handset to satisfy their urge to go in for new models, many postpone the decisions since the exchange value is quite low. A usage period of 1 to 2 years appears to be normal before a consumer decides to go in for a new handset.

4. The marketing efforts by Nokia manufacturing company are extremely good. They make use of all forms of marketing such as Direct Marketing, Marketing through franchise distributors, dealers and retailers. The Hoardings and Advertisements on print and electronic media are very impressive and rewind the memory space of consumers for a very long time. It has become the most preferred brand because of technical superiority, marketing capabilities, price control and also effective after sales service.

5. Consumers take in to account while purchasing a mobile phones on price, Brand name & makes, quality, user friendliness, reliability and technological superiority. So the consumer is focusing on all the sides, most of the peoples are

considering on all the aspects in high and very high preference.

6. Features are mainly focused by most of the consumers, they think the features are the main characters in mobile phones that the necessity, most of the peoples are preferring the latest features that the old.

7. If we see on the satisfaction level most of the peoples are satisfied with their handsets that shows almost of the consumers are having a good awareness about the brands and this indicates that they are getting the value for the money spent.

8. Consumers regarding their performance on any other brand other than they possess, it was mentioned that consumers have once again preferred NOKIA, they feels that the NOKIA will be their best choice for ever

9. The source of awareness of the brands selected by the users is through Word of Mouth advertising. Friends and Ads play a dominant role in influencing buyers. Advertisement in print and electronic media creates awareness on the availability of brands. The out door advertisement through Hoardings provides additional information and helps the consumers to select their brands. Satisfactory performance of the handsets initiates the buyers to influence others to buy the same brands owned by the

10. When we see the attitudes towards other brands, nokia and Samsung are having high price, when we compare any other brands, even though there are different range of mobile phones, the technologies and the designs are there in high rated mobiles

11. Consumers find the price of brands like Nokia and Samsung a bit high when compared to others but taking into consideration the quality and performance of these handsets, most of them are able to pay for them.

12. Consumers are mainly concentrating on brand names and makes, especially for nokia the consumers have given very high, for Samsung its high and other brands its moderate.

13. Consumers in the process of selecting a handset give importance for quality since it is one of the characteristics which influence product buying. Quality is defined a fitness for use and this aspect is incorporated in the handset made by most of the manufacturers.

14. Most of the consumers prefer nokia as the best user friendly phones and that makes the nokia stronger in the Indian market.

15. Consumers always prefer a reliable product at optimum cost, majority prefers products, which are widely advertised and are available at convenient locations. Nokia cell phones meet all this criteria and hence, from the user's angle it is has a very superior Brand name in this competitive market

16. With the advent in technology, the consumers' also demands Keep increasing . Consumers prefer having the latest features in Their phones like Color display, Radio,MP3&MP4, Camera with flash, Infra-red, Blue- Tooth, GPRS etc. These are the features that the consumers are basically looking forward to in future when they buy a mobile Phone.

17. It can be observed that almost of the respondents feel that owning a Nokia handset is a matter of very high Pride. feels that Samsung handset brings about a sense of Pride in you. Most of them have rated owning a Motorola or a Sony Ericsson or an LG phone as a matter of Moderate pride.

18.The respondents have rated the Utility of Nokia phones as very high and high. Then the Samsung handsets are highly useful and around Motorola are

moderate. Most of them have rated the utility of other brands to be moderate.

19. The media advertisement publicity as well as sales promotion has created the brand image. Consumers always prefer a reliable product at optimum cost, majority prefers products, which are widely advertised and are available at convenient locations. Nokia cell phones meet all this criteria and hence, from the user's angle it is the highest sold commodity in this competitive market.

20. The performance criteria in terms of quality, user-friendliness, reliability, durability and maintainability appear to be the key factors in influencing consumers to buy the product. Nokia's market share is quite high and undoubtedly Nokia is the market leader in this category. Consumers, who decide to buy a cell phone for the first time, prefer to go in for Nokia phones because of its high reliability and also its availability in a wide range of variety and price ranges.

SUGGESTIONS

1) All manufactures need to give due importance by incorporating quality in design to make the handset more and more robust. Before launching any new models, a pre-testing may be undertaken to ascertain that the users are

comfortable in handling and using the cell phones.

2) Companies manufacturing cell phones should openly advertise "Buy back schemes" which creates interest in the consumers to go in for a change. Enough awareness should also be created highlighting technological improvements and cost-advantage to initiate the buyers for changing the handset.

3) Now a days, almost all the companies are coming up with phones with latest features. But the ones in this segment are priced very high. As a result, it cannot be afford by the common man.. Companies should make efforts to bring down the cost of such mobiles to increase its sales.

4) Manufacturers should give equal importance not only for media advertising but also for sales promotion and personal selling. Sufficient resources should be provided towards advertising budget to make the brand popular and stand out in the market.

5) Price is one of the most important factor consumers take into consideration when purchasing a mobile phone. They prefer products that are priced optimum. The price of the product measures their ability to pay. Companies should make efforts to ensure that their products are priced optimum so that it can be afford by the common man.

6) Continuous updating to match the present and future technological changes and innovations must be considered by manufacturers. New models shall invariably be brought into the market but spares support must continue to be provided to the earlier models and the quality should be mainly notified by the manufacturer.

7) It shall be the endeavor for manufacturers to delight the consumer by offering

more facilities and also by continuous improvements; they can aim at higher levels of satisfaction.

8) The latest version of the cell phones, which only weighs 55 to 80 grams, appears to have further increased the passion for the usage of a cell phone by many consumers. For top-level executives, it is certainly a status symbol. For many others it is a necessity and also a matter of pride.

9) Satisfactory performance of the handsets initiates the buyers to influence others to buy the same brands owned by them. This creates a chain effect in a few people telling many and many telling many more. It also depends on how the dealers and retailers help the buyers in the process of selection and decision making.

10) A one/two page voucher may also be supplied highlighting important facilities available. This reduces the monotony of the consumers to pick user manuals and understand the user-friendly characteristics. Since the volume of consumption is increasing gradually, manufacturers must be able to hold on to the present prices that extend more facilities.

11) New models shall invariably be brought into the market but spares support must continue to be provided to the earlier models. Enough awareness should also be created highlighting technological improvements and cost advantage to initiate the buyers for changing the handset.

CONCLUSION

Consumers consider mobile phones as something very necessary and indispensable in their lives. They use it as the most important means of communication. Consumers in the process of selecting a handset give importance for quality since it is one of the characteristics which influence product buying. Quality is defined a fitness

for use and this aspect is incorporated in the handset made by most of the manufacturers.

Some people find cell phones as a status symbol and something they can be proud of. Nowadays, almost all the companies are coming up with phones with latest features. But the ones in this segment are priced very high. As a result, it cannot be afforded by the common man. Companies should make efforts to bring down the cost of such mobiles to increase its sales. All manufactures need to give due importance by incorporating quality in design to make the handset more and more robust. Before launching any new models, a pre-testing may be undertaken to ascertain that the users are comfortable in handling and using the cell phones. A one/two page voucher may also be supplied highlighting important facilities available.

From the survey it can be concluded that Nokia has come up with one of the best products and service in the market. Nokia's recycling programme has also helped the environment and improved the image of the company among the customers and public.

From this survey it can be concluded that Nokia's products and services are widely accepted and respected in Bangalore city.

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QUESTIONNAIRE

NOKIA
Connecting People

Dear Sir/Madam,

I am a management student conducting a survey on customer satisfaction with reference to Nokia Care Centre on Residency Road in Bangalore. This exercise is a part of the project towards fulfilling the requirements of the management course (BBM). I would be obliged if you could provide me with some of your valuable time to answer a few questions.

Name: _____

Occupation: _____

Age group: 19-25 ☐ 25-35 ☐ 35-40 ☐ 40-50 ☐ above50 ☐

1. Do you possess a mobile phone? Yes ☐ No ☐

2. Which brand are you using? _____

3. What is the first thing that comes to your mind when you hear the word MOBILE PHONE ?

☐ Calls ☐ Messages ☐ Necessity ☐ Status good

If others, please specify _____

4. How often do you change your handset?

☐ < 6 months ☐ 6 months ☐ 1 yr ☐ > 2yrs

5. Name the top 3 brands in your order of preference?

_____ , _____ , _____

6. Nokia is the leading brand…

☐ Agree ☐ Strongly Agree ☐ Disagree ☐ Strongly Disagree

7. Nokia handsets are user friendly…

☐ Agree ☐ Strongly Agree ☐ Disagree ☐ Strongly Disagree

8. Owning Nokia handset is a style symbol…

☐ Agree ☐ Strongly Agree ☐ Disagree ☐ Strongly Disagree

9. Nokia handsets are highly priced…

☐ Agree ☐ Strongly Agree ☐ Disagree ☐ Strongly Disagree

10. Rate the following parameters while choosing a mobile phone?

(Rate on scale 1 to 5; 1 = Low, 5 = High)

Parameter	**Rating**	**Rate your Mobile (in use)**
Price		
Brand Name and Make		
Quality		
User- friendliness		
Reliability		
Technological Superiority		

11. If you are planning to buy another Mobile phone, what features would you go for?

☐ Color display

☐ Radio

☐ Camera

☐ Infra-red and Blue – tooth

☐ GPRS compatible

☐ Others

If others, please specify ☐

12. Are you satisfied with your Handset? ☐ Yes ☐ No

If **NO**, why?

☐

13. Which other Handset would you like to go for?

☐

Why?

☐

14. How did you come to know about your Handset?

☐ Friends ☐ Relatives ☐ Ads ☐ Others

If others, please specify ☐

15. Rate the various Brands list below on the following parameters?

(Rate on scale 1 to 5; 1 = Low, 5 = High)

Brand / Attributes	Nokia	Samsung	Motorola	Sony	LG
Ability to pay					
Brand Name and Make					
Quality					

User-friendliness					
Reliability					
Technological Superiority					
Pride					
Utility					
Brand Power					
Spread Effect					

If others, please specify

Signature

Thank you for your kind Cooperation

Al-Ameen Institute of Management Studies