

Mobile Computing

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ABSTRACT

Consumers demand more from their technology. Whether it be a television, cellular phone, or refrigerator, the latest technology purchase must have new features. With the advent of the Internet, the most-wanted feature is better, faster access to information. Cellular subscribers pay extra on top of their basic bills for such features as instant messaging, stock quotes, and even Internet access right on their phones. But that is far from the limit of features; manufacturers entice customers to buy new phones with photo and even video capability. It is no longer a quantum leap to envision a time when access to all necessary information — the power of a personal computer sits in the palm of one's hand. To support such a powerful system, we need pervasive, high-speed wireless connectivity.

A number of technologies currently exist to provide users with high-speed digital wireless connectivity; Bluetooth and 802.11 are examples. These two standards provide very high-speed network connections over short distances, typically in the tens of meters. Meanwhile, cellular providers seek to increase speed on their long-range wireless networks. The goal is the same: long-range, high-speed wireless, which for the purposes of this report will be called 4G, for fourth-generation wireless system. Such a system does not yet exist, nor will it exist in today's market without standardization. Fourth-generation wireless needs to be standardized throughout the United States due to its enticing advantages to both users and providers.

Keywords: High Definition Television; Bluetooth;

I. INTRODUCTION

Mobile systems focus on seamlessly integrating the existing wireless technologies including GSM, wireless LAN, and Bluetooth. 4G systems supports comprehensive and personalized services, providing stable system performance and quality service. 4G is a Mobile multimedia, anytime anywhere, Global mobility support, integrated wireless solution, and customized personal service network system. 4G is used broadly to include several types of broadband wireless access communication systems along with cellular telephone systems.

A 4G cellular system must have target peak data rates of up to approximately 100 Mbit/s for high mobility such as mobile access and up to approximately 1 Gbit/s for low mobility such as nomadic/local wireless access, according to the International Telecommunication Union[ITU] requirements.

Scalable bandwidths up to at least 40 MHz should be provided. A 4G system is expected to provide a comprehensive and secure all-IP based solution where facilities such as IP telephony, ultra-broadband Internet access, gaming services and High Definition Television (HDTV) streamed multimedia may be provided to users. In 4G networks, users joining the network via add mobile routers to the network infrastructure. Network capacity and coverage is dynamically shifted to accommodate changing user patterns.

II. SOCIAL NETWORKING SYSTEM

A social network site is a web site that Acts as a destination hub for individuals to establish relationships with co-workers and by doing so, enable them to jointly

build, or expand, their professional and social networks. It includes different tools for people to interact with each other, contribute information to the site, participate in different site activities, and build a sense of community in an informal and voluntary manner. It allows the user to define an online profile (or personal), list their connections (e.g., friends and colleagues) , receive notifications on the activities of those connections participate in group or community activities , control permission, preference and privacy settings . We define social network sites as webbased services that allow individuals to do the following

1. construct a public or semi-public profile within a bounded system
2. articulate a list of other users with whom they share a connection, and
3. View and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site.

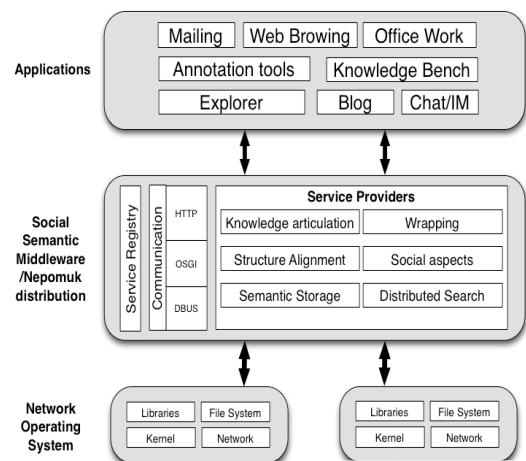


Figure . Social Network Architecture

In the existing social network sites are allowed to search the members, introduce the member, allow to send the message, share the photo, video and online chat etc. But the social networks are not realistic as we are interacting in a realistic work or environment. In the social network intermediate objects are skipped and an object member can establish the connection to the next member with its maximum degree level.

III. SOCIAL NETWORK ARCHITECTURE

In the social network system has three layer processes. In this three layer application layer establish the interface with the user and rest of network process. In the interface level mailing, browsing, office work, annotations, knowledge bench, block and chat applications. These interface mainly used to maintain the communication with the social members and share information among the group. At the same time layer inherit to middle ware layer to register, create communication and provide the service to application layers.

IV. SOCIAL NETWORKING AND 4G TECHNOLOGY

The social networking process is an involved variety of networks such of Corporate Network, Home area network, Wireless Personal area network n Internet and vehicle area network. The combinational network represented below with its possible connectivity architecture.

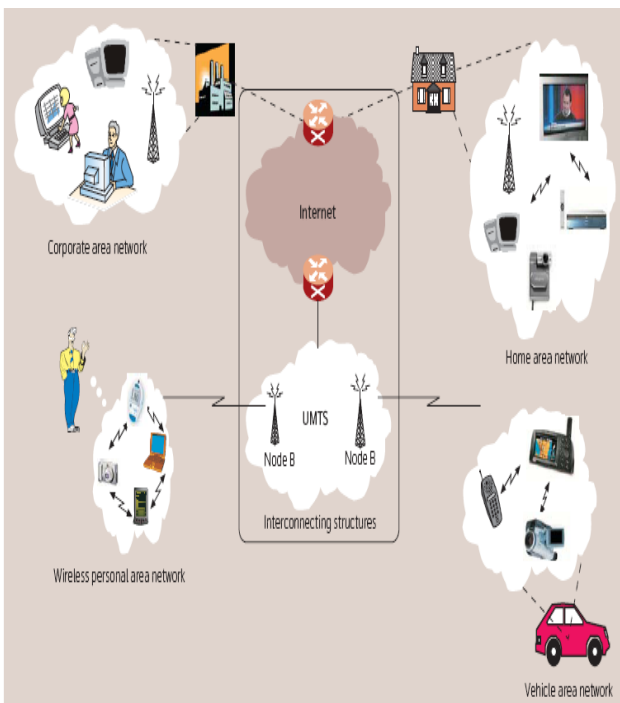


Figure: 4G Network Device Connectivity

While we are constructing the social network that will provide infrastructure service, web site content and application, relation control and participation model. Relation control and participation model work together to enrich the social presence of the registered user of the

social network group member, Actor profile and Social Graph. The infrastructure model provides the facility to Collaboration & Content service and Social Networking services. The social network architecture is simulates the Cloud computing architecture.

Many portal sites offer streaming audio and video services for accessing news and entertainment content on the Internet from a PC. The term multimedia streaming means that there are more than one media type involved in the communication, e.g. text and graphics, voice, animations, video and audio. We define multimedia to denote the property of handling a variety of representation media in an integrated manner. This means that the various sources of media types are integrated into a single system framework. Currently, three incompatible proprietary solutions offered by Real Networks, Microsoft, and Apple dominate the Internet streaming software market. In the near future, third-generation mobile communication systems will extend the scope of today's Internet streaming solutions by introducing standardized streaming services, targeting the mobile users specific needs.

First, the mobile network or a terminal integrated positioning system such as GPS would determine the users geographical location. Then, the service would access a cinema database to generate a list of nearby movie theatres and a user profile database to determine what kind of movies the user likes best. Based on the geographical location information and user-defined preferences, the service would offer the user a selection of available movies and show times. The user would then have the option of using the mobile device to view corresponding movie trailers through a streaming service.

Communication systems. An integral part of this architecture is a streaming proxy, which acts on both the service and transport levels. It is flexible enough to deal with different operator requirements and that it can provide high-quality streaming services in a mobile application environment.

V. 4G MOBILE COMMUNICATION SYSTEMS

International Mobile Telecommunications - 2000 (IMT-2000) and the Universal Mobile telecommunications System (UMTS) will be among the first 3G mobile communication systems to offer wireless wideband multimedia services using the Internet protocol. Two important technological changes will facilitate this advancement. The first change is a shift from last-generation radio-access technologies such as the global system for mobile (GSM) communication, CDMA One (an IS-95 code division multiple access standard), and personal digital cellular (PDC) toward more sophisticated systems with higher data-transfer rates such as the enhanced data.

Fourth-generation mobile communication systems will combine standardized streaming with a

range of unique services to provide high-quality content that meets the specific needs of the rapidly growing mobile market. GSM environment (EDGE), wideband CDMA (WCDMA) and cdma2000. As Figure 1 illustrates, the second important technology shift is from a vertically integrated to a horizontally layered service environment. A horizontally layered 4G service network seamlessly integrates Internet protocol transport into a mobile service environment with a variety of access networks, opening up many new opportunities for IP-based mobile applications.

1. Speeds up to 50 times higher than of 3G. However, the actual available bandwidth of 4G is expected to be about 10 Mbps.
2. Three-dimensional virtual realities imagine personal video avatars and realistic holograms, and the ability to feel as if you are present at an event even if you are not. People, places, and products will be able to interact as the cyber and real worlds merge.
3. Increased interaction between corroborating technologies; the smart card in your phone will automatically pay for or will tell your car to warm up in the morning as your phone has noted you leaving the house. We can use new technology such as CDMA wireless access technology, advanced antenna systems, next-generation mobile Internet, quality of service, power amplifier technology, and wireless access networks in 4G mobile communication system.

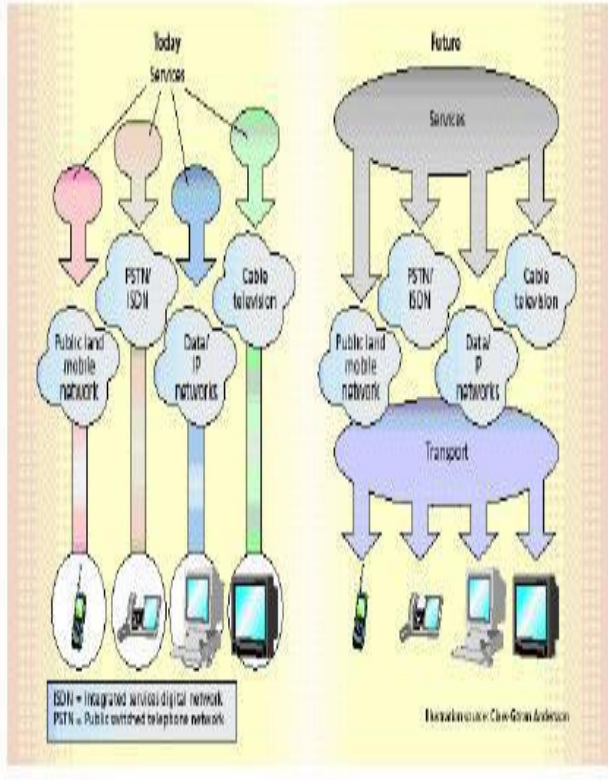


Figure 1-The Shift From A Vertically Integrated To A Horizontally Layered Mobile Service Environment. 4g Network Seamlessly Integrate Internet Protocol Transport With A Variety Of Access Networks

VI. 4G APPLICATION AND THEIR BENEFITS TO PUBLIC SAFETY

One of the most notable advanced applications for 4G systems is locationbased services. 4G location applications would be based on visualized, virtual navigation schemes that would support a remote database containing graphical representations of streets, buildings, and other physical characteristics of a large metropolitan area.

Virtual navigation: As described, a remote database contains the graphical representation of streets, buildings, and physical characteristics of a large metropolis. Blocks of this database are transmitted in rapid sequence to a vehicle, where a rendering program permits the occupants to visualize the environment ahead. They may also "virtually" see the internal layout of buildings to plan an emergency rescue, or to plan to engage hostile elements hidden in the building.

Tele-medicine: A paramedic assisting a victim of a traffic accident in a remote location could access medical records (e.g., x-rays) and establish a video conference so that a remotely based surgeon could provide "on-scene" assistance. In such a circumstance, the paramedic could relay the victim's vital information (recorded locally) back to the hospital in real time, for review by the surgeon.

Crisis-management applications: These arise, for example, as a result of natural disasters where the entire communications infrastructure is in disarray. In such circumstances, restoring communications quickly is essential. With wideband wireless mobile communications, both limited and complete communications capabilities, including Internet and video services, could be set up in a matter of hours. In comparison, it may take days or even weeks to re-establish communications capabilities when a wireline network is rendered inoperable.

VII. ADVANTAGES

- 1) Low cost
- 2) Coverage of Wide Area
- 3) Wide Variety of Services Capability

VIII. CONCLUSION

Consumers demand that software and hardware be user-friendly and perform well. Indeed, it seems part of our culture that customers expect the highest quality and the greatest features from what they buy. The cellular telephone industry, which now includes a myriad of wireless devices, is no exception. Meanwhile, competition in the industry is heating up. Providers are slashing prices while scrambling for the needed infrastructure to provide the latest features as incentives, often turning to various 3G solutions. Unfortunately, this will only serve to bewilder customers in an already confusing market.

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Customers want the features delivered to them, simple and straightforward. Wireless providers want to make money in a cutthroat industry. If the U.S. government wants to help, the best way to help all parties is to enforce 4G as the next wireless standard. The software that consumers desire is already in wide use. The transmission hardware to take it wireless is ready to go. And we have the security practices to make sure it all works safely.

The government need only push in the right direction; the FCC need only standardize 4G in order to make the transition economically viable for all involved.

This is a need that demands a solution. Today's wired society is going wireless, and it has a problem. 4G is the answer.

4G technology opens the new door for variety mobile applications. Thus it will create enormous change in the upcoming mobile and technology world.

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