Mobile Application Programming

LECTURE ONE

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1. INTRODUCTION

The concept of the "Mobile Phone Family" in the context of mobile app development is likeness used to describe the historical evolution and relationships between various entities and technologies in the mobile communication industry. It provides insights into how mobile phones and their associated services have evolved over time. **Overview of key points:**

1. **First Generation (1G):** The first generation of mobile networks was primarily focused on basic voice communication. Mobile phones allowed people to make calls while being mobile, but there were no additional functionalities beyond voice services. The communication architecture involved base stations communicating with mobile phones.

2. **Second Generation (2G):** The transition from analog to digital mobile systems marked the second generation. This shift brought enhanced services such as the Short Message Service (SMS) and data connections to the Internet. It also introduced the split between network providers and service providers, creating a more competitive landscape.

3. **Four Major Players:** The mobile market became divided into four major players as shown in Figure 1: customers, network providers, service providers, and mobile phone manufacturers. This division allowed third-party service providers to offer their services on mobile phones, creating new business opportunities.

4. **Challenges to Network Provider Dominance:** The dominance of network providers is weakening due to the rise of wireless technologies like Wi-Fi (WLAN) and Bluetooth. These technologies enable new types of services without strict dependency on network operators.

5. **Third Generation (3G):** The third generation of mobile networks (3G) did not bring radical changes compared to 2G. It emphasized that pure technology

alone is not enough. Network providers moved away from marketing 3G as a distinct feature, treating it as an evolutionary step.
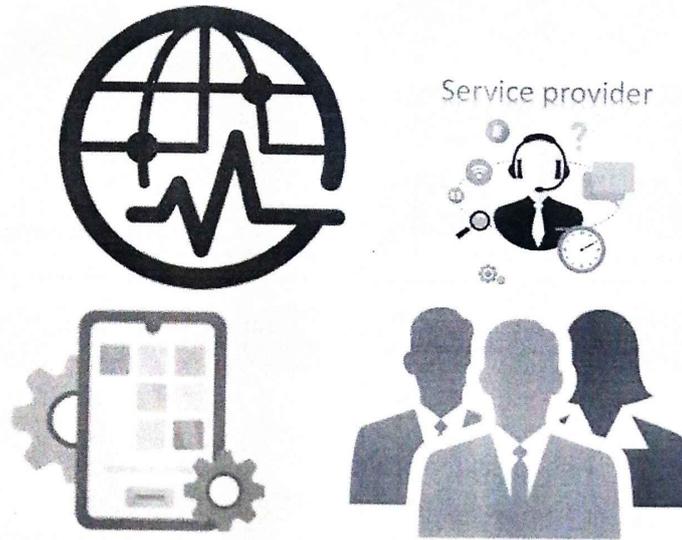

Figure 1: Interdependencies between the mobile phone customer, the network provider, the service provider, and the mobile phone manufacturer.

6. **The Challenge of Identifying Applications:** Identifying successful mobile services is challenging. Customer opinions and preferences do not always align with the actual usage of services. Designing new applications and predicting their market success is difficult.

7. **Personal and Community Services:** Mobile services can be categorized into personal and community services as shown in Figure 2. Personal services are used primarily by individuals with limited interaction with others, while community services involve interaction with other users.

8. **Wireless Network Support:** Services can be classified based on whether they require wireless network support. This support can include standard GSM connections, GPRS, EDGE, 3G data connections, Bluetooth, or WLAN.

9. **Customization and Community Services:** Successful services often involve customization, such as personalized ring tones, wallpapers, and logos.

Community services, like voice and SMS, have been highly successful, emphasizing the importance of connecting people.
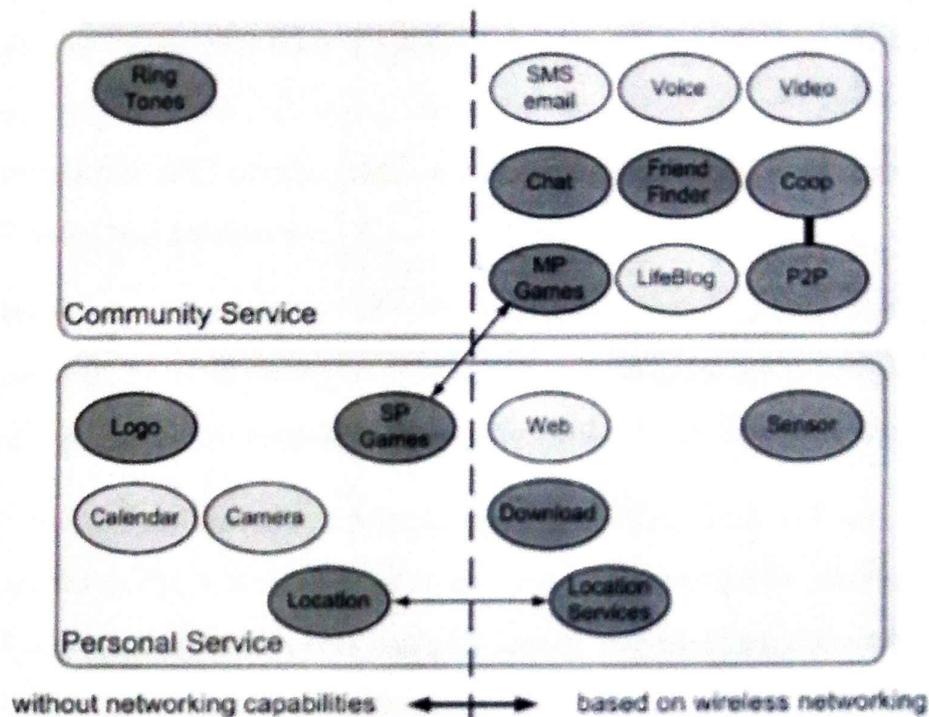

Figure 1: Classification of services into service and community services

10. **Peer-to-Peer and Cooperative Services:** These service classes represent the future of mobile communication systems, specifically in the context of fourth-generation (4G) and beyond. Peer-to-peer services focus on direct interactions between users, while cooperative services involve collaborative efforts.

11. **Sensor Services:** Mobile phones with sensor capabilities are expected to play a role in future communication systems, possibly in 4G or 5G networks. These services can utilize sensors in mobile devices for various applications.

2. Reasons for using mobile application programming

1. **Accessibility and Convenience:** Mobile apps provide users with easy access to information, services, and entertainment from their smartphones or tablets.

They are designed to be user-friendly and provide a seamless experience, making it convenient for users to access what they need on the go.

2. **Engagement and User Experience:** Mobile apps are essential for businesses and organizations to engage with their audience effectively. They can create interactive and personalized user experiences, which can enhance customer loyalty and satisfaction.

3. **Revenue Generation:** Mobile apps offer opportunities for businesses to generate revenue through various means, such as in-app purchases, advertising, and subscription models.

4. **Offline Functionality:** Mobile apps can often work offline or with limited connectivity, which is crucial in areas with unreliable internet access. This feature ensures that users can still access essential functions and content even when not connected to the internet.

5. **Integration with Device Features:** Mobile apps can leverage the capabilities of the device, such as GPS, camera, and sensors. This allows for the development of innovative applications that can provide location-based services.