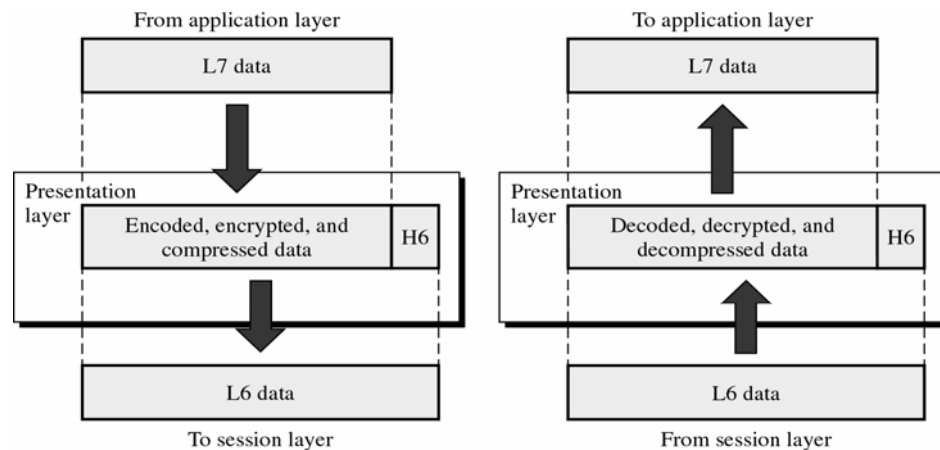


## **LECTURE #10**

### ❖ **Presentation Layer**

- This layer is concerned with Syntax and Semantics of info exchange between two systems



- **Functions of Presentation Layer**

- **Translation**

- The processes (running programs) in two systems are usually exchanging info in the form of character strings, numbers and so on.....
    - The info should be changed to bit streams before being transmitted
    - Because different computers use different ENCODING SYSTEMS, presentation layer is responsible for interoperability b/w these different encoding methods
    - The presentation layer at the sender changes the info from its sender-dependent format to the common format
    - The presentation at the receiver changes info from common to the receiver dependent format

- **Encryption**

- To carry sensitive info , a system must be able to assure privacy
    - Encryption means that sender transforms original info to another form and sends the resulting message out over the network
    - Decryption reverses the original process to transform message back to its original form

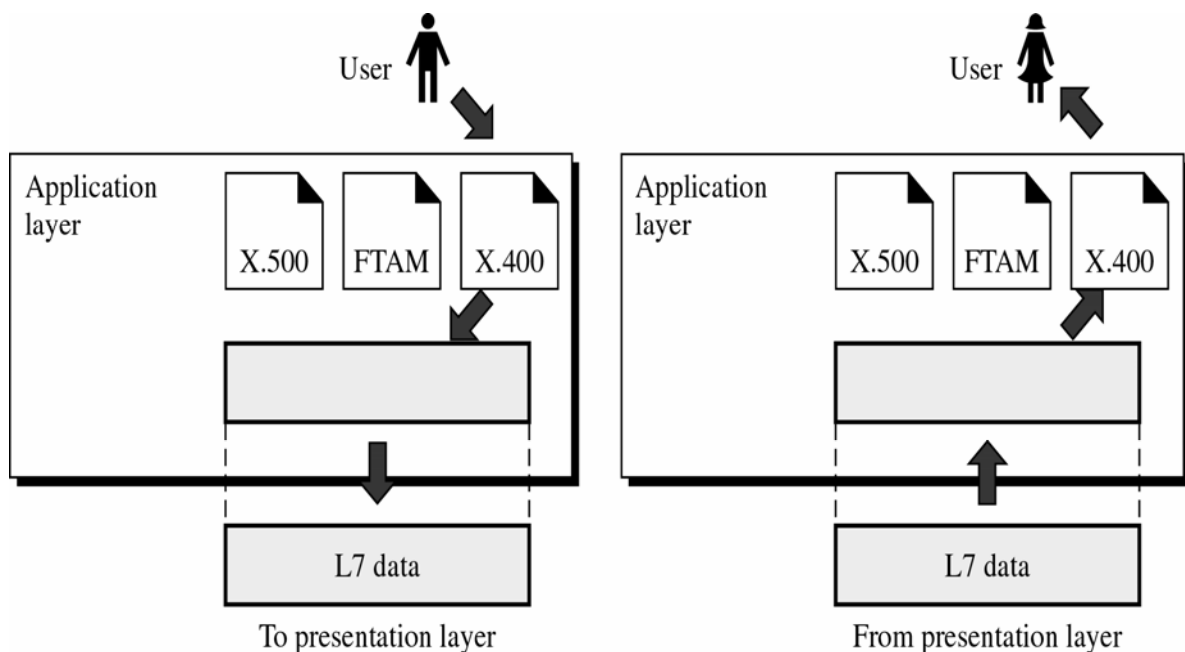
- **Compression**

- Data compression reduces the number of bits to be transmitted
- Data compression becomes particularly important in transmission of multimedia such as text, audio and video

- ❖ **Application Layer**

- Enables the user either human or software to access the network
- It provides user interface and support for the services such as Electronic mail, Remote File access and Transfer, Shared Database Management and other services

**Application Layer Figure**



- In the figure, of many application services available, only three services are shown
  - X-400 (message Handling Services)
  - X-500 (Directory Services)
  - File Transfer, Access& Management (FTAM)
- In this example user uses X-400 to send an e-mail message
- No headers or trailers are added at this layer

- **Application Layer Functions**

➤ **Network Virtual Terminal**

- NVT is a software version of a physical terminal and allows a user to log on to a remote host
- To do so the application created emulation of terminal at the remote host
- Users computer talks to the software terminal which in turn talks to the host \*& vice versa
- Remote host believes it is communication with one of its own terminals and allow you to log on

➤ **File Transfer, Access & Manag.(FTAM)**

- This application allows a user to access file on the remote computers to make changes or read data
- The purpose of this access is to Retrieve files from a remote computer and to manage or control files in that remote computer

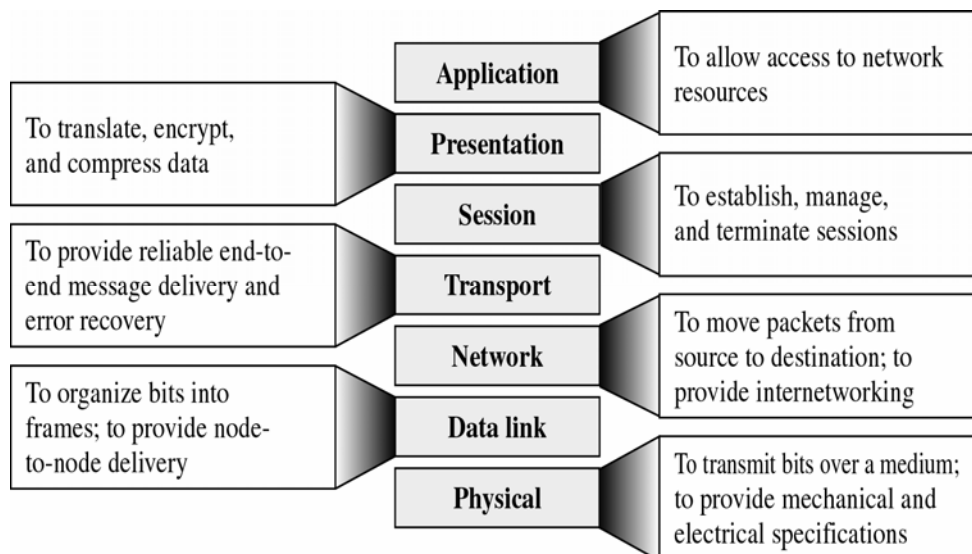
➤ **Mail Services**

- This application provides the basis for email forwarding and storage

➤ **Directory Services**

- Provides distributed database sources and access for global info about various objects and services

**Summary of Layer Functions**



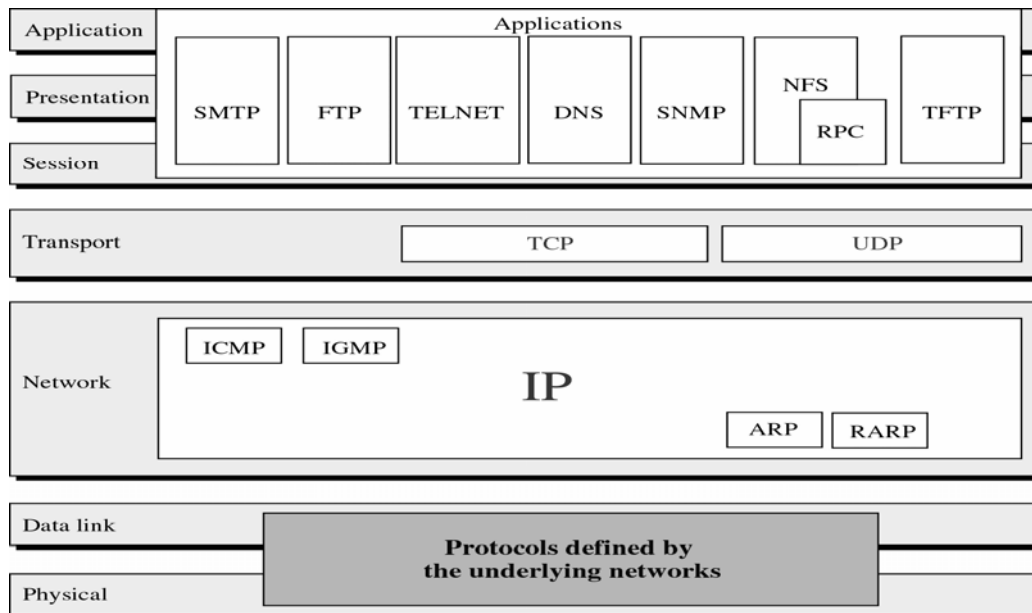
**TCP/IP Protocol Suite**

- Transmission Control Protocol / Internetworking Protocol
- Developed Prior to OSI Model
- Widely used in the Internet Today

❖ **Layers in TCP/IP Protocol Suite**

- Physical (physical standards)
- Data Link (N/w Interface)
- Network (Interconnectivity)
- Transport(Transport Functions)
- Application(Session , Pres, app of OSI)

**TCP/IP Protocol Suite**



**Summary**

- ◆ The OSI Model
- ◆ Functions of Layers
- ◆ TCP/IP Protocol Suite

**Reading Sections**

- ◆ Section 3.2, 3.3 “Data Communications and Networking” 2<sup>nd</sup> Edition by Behrouz A. Forouzan