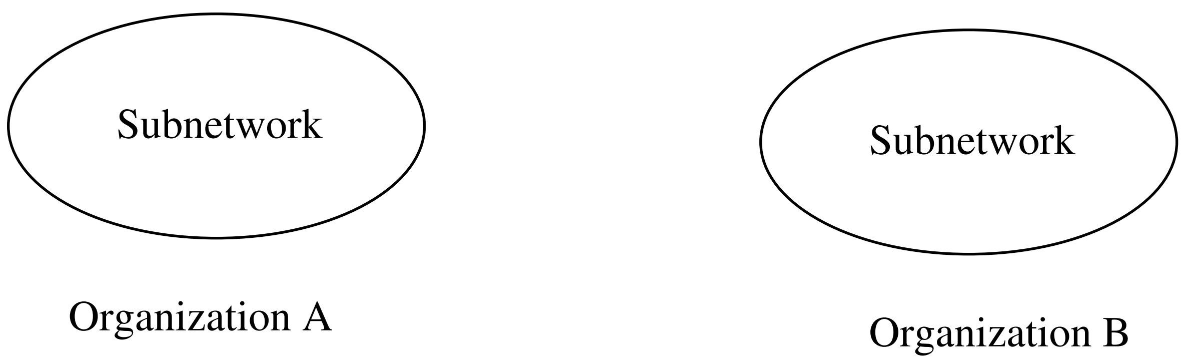
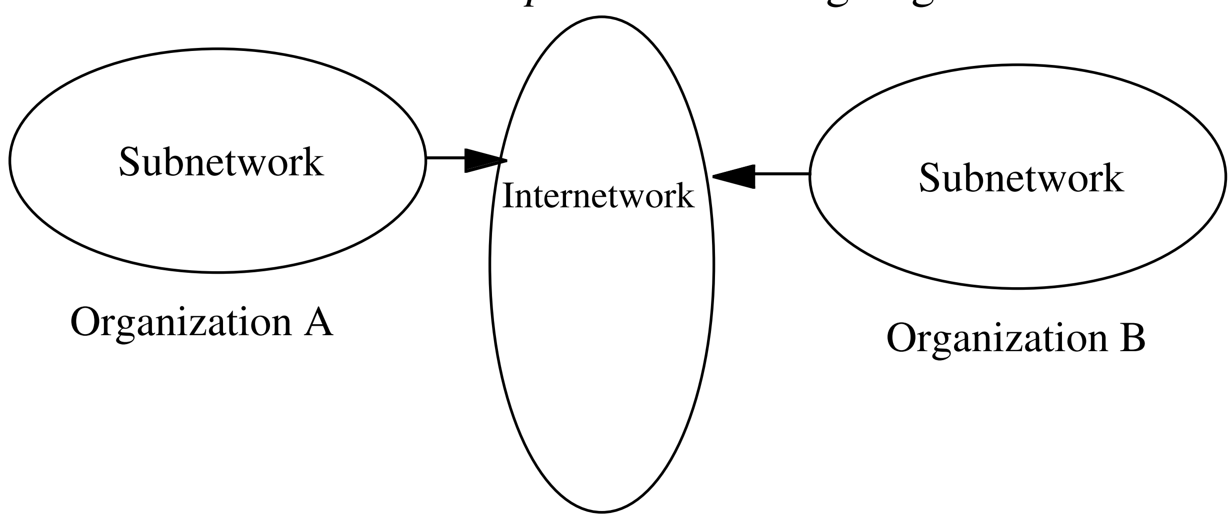
Network Layer
Addressing



Subnets A & B are *independent* in assigning addresses.



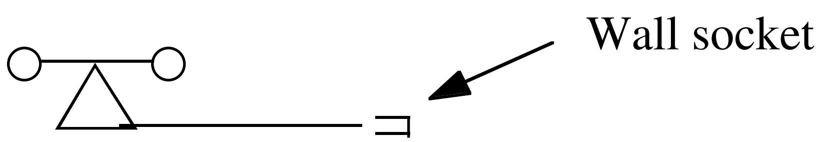
Routing from Subnet A to subnet B is a network layer function and requires some *coordination* between the subnetworks.

Addresses must have some agreed upon structure.
Network Service Access Points (**NSAP**)

Network Layer

Addressing

- *Addressing and the socket analogy*



If the telephone is moved calls are still delivered to the address corresponding to the wall socket.
Calls are independent of which telephone or who picks up the telephone.

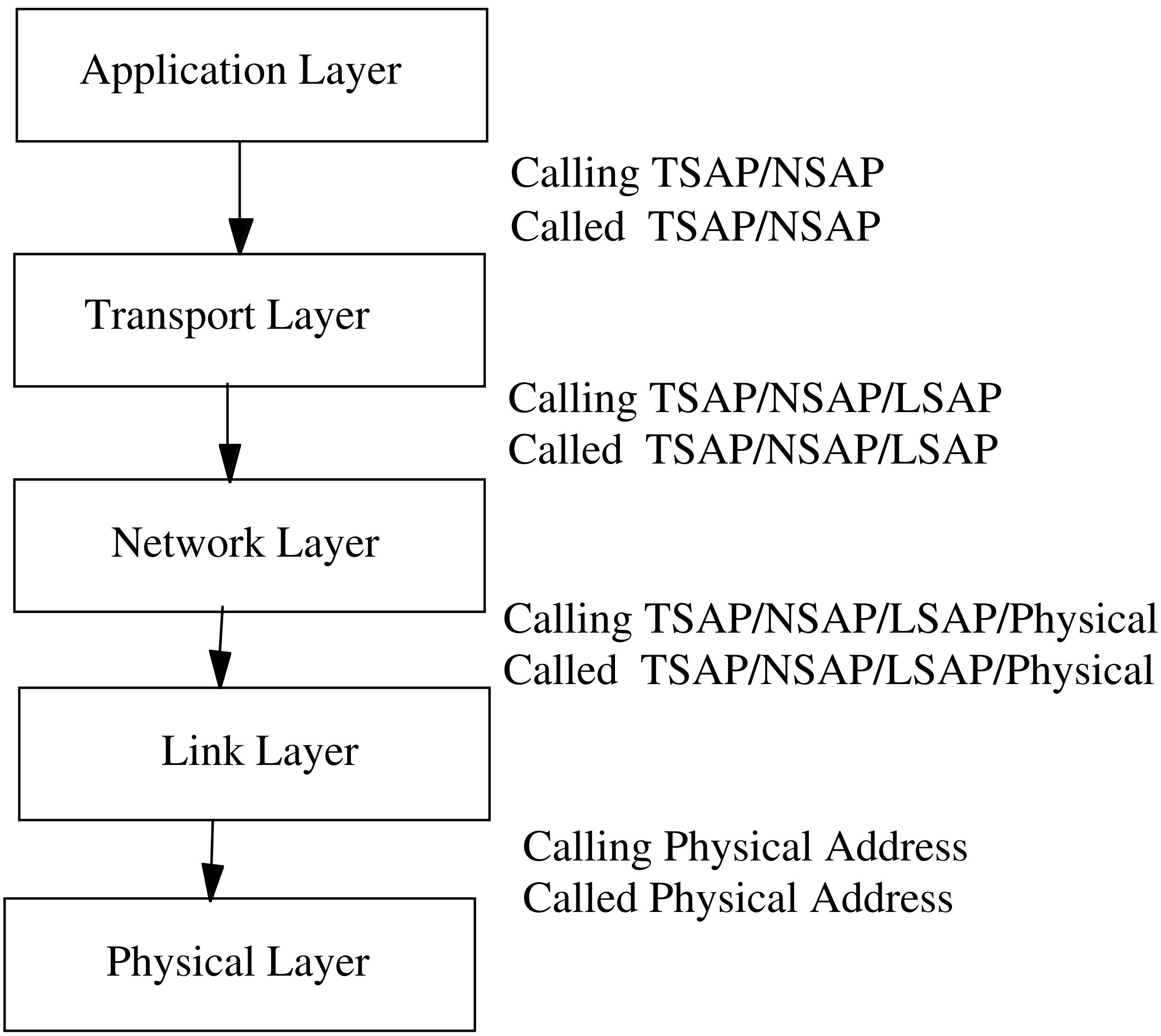
Network Layer

Addressing

- NSAP corresponds to the socket
- NSAP addresses corresponds to the telephone number
- The network delivers packets to the specified NSAP
- The network layer processing does not care about
  - The specific transport layer attached to the NSAP
  - Who owns the transport entity
- The NSAP does not need the physical layer address only the LSAP
- To control the complexity a hierarchy is used for the NSAP addresses

Network Layer

Addressing



Network Layer
Addressing

- For internetworking to work there must be agreement on the exact form of the NSAP
- OSI addressing standard

Network Layer

Addressing

- Components of NSAP Addresses
  - IDP: Initial Domain Part
    - AFI: Authority and Format Identifier
      - Network type
      - Structure and format of the domain specific part (DSP)
    - IDI: Initial Domain Identifier
      - Specifices the domain and structure of the (DSP)
      - Example: If DSP is a phone number then the IDI could be a country code

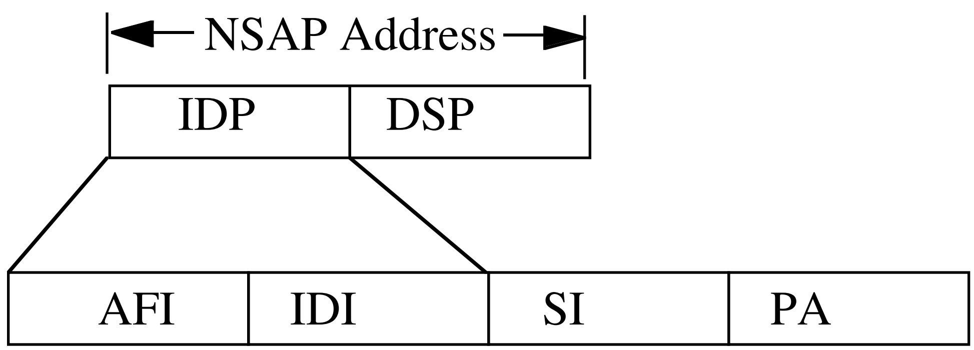
Network Layer

Addressing

- Domain Specific Part
  - Phone number
  - ISDN number
  - Telex number
  - Subnet Identifier (SI)
  - Physical Identifier (PI)
  - The DSP is arranged in a hierachy
    - Example: The SI could be an area code or specific LAN and the PI could be a physical address on a LAN

Network Layer

Addressing



Network Layer

Addressing

- IDI Formats
  - International ISDN PSDN X.21
  - International Telex F.69
  - International PSTN E.163
  - International ISDN E.164