Location Configuration Protocol

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The Problem Space

- **If the end host is able to derive location on it's own or via it's access control mechanism, we have no problem and no need for LCP.**

- **If not……**

The Problem Space

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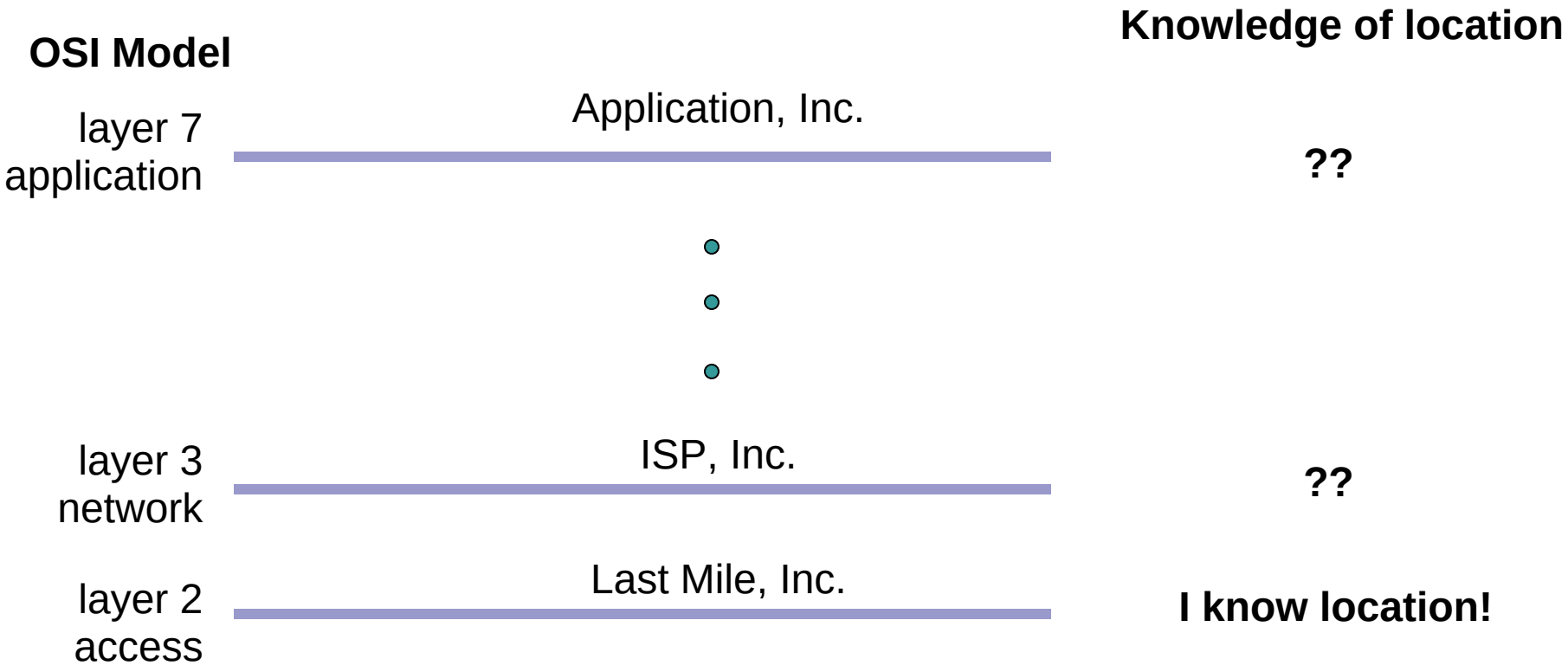
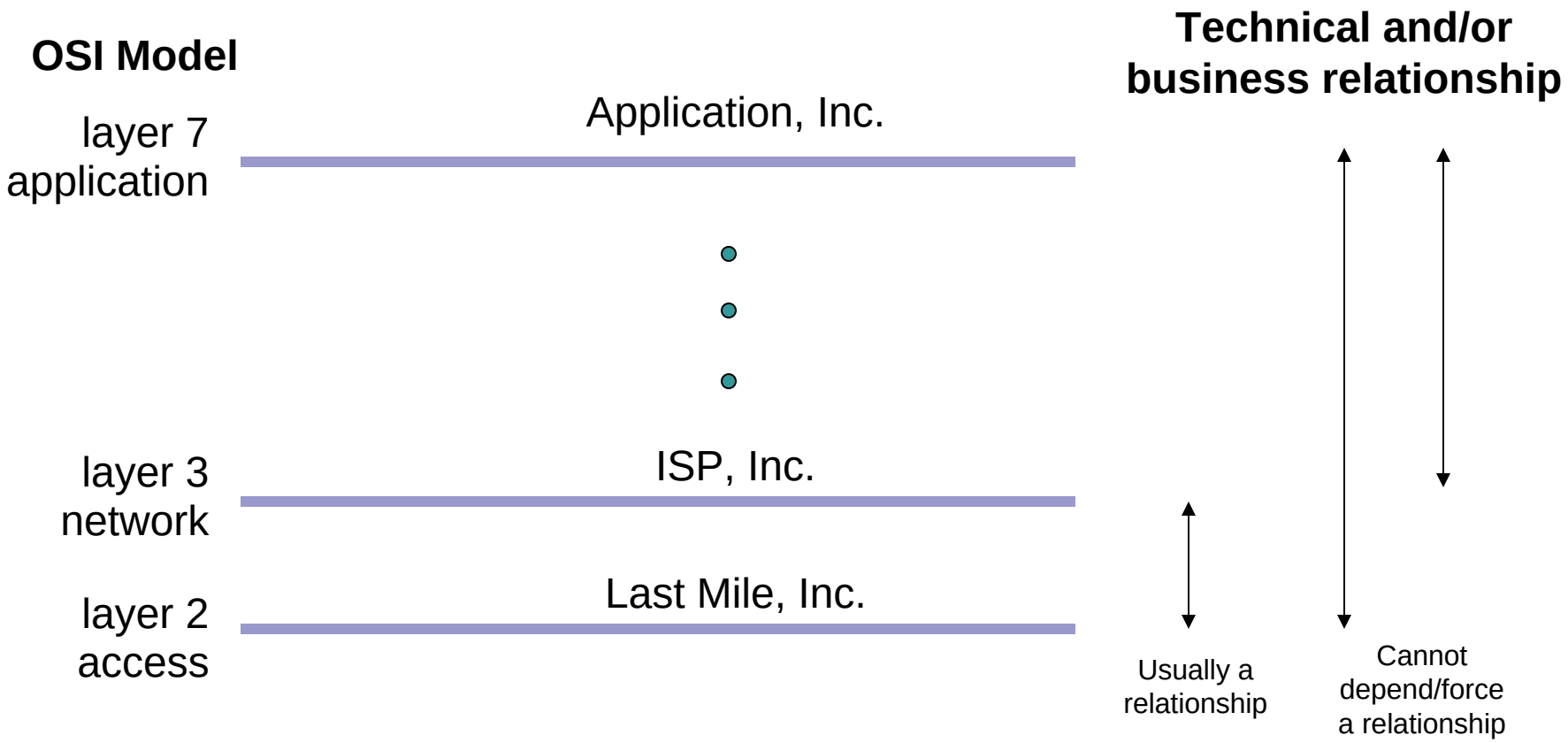


The Problem Space



The Problem Space

OSI Model

layer 7
application

Application, Inc.

layer 3
network

ISP, Inc.

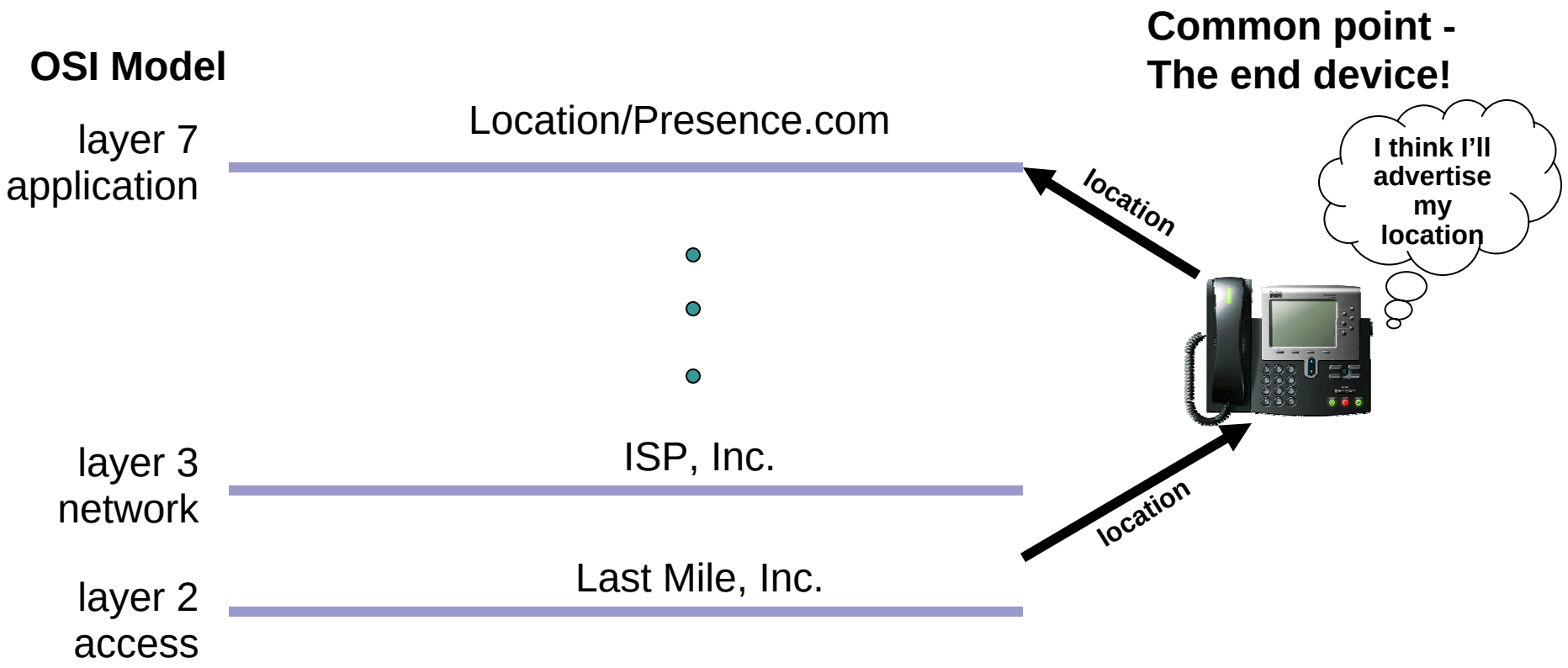
layer 2
access

Last Mile, Inc.

**Common point -
The end device!**

Internet Architecture

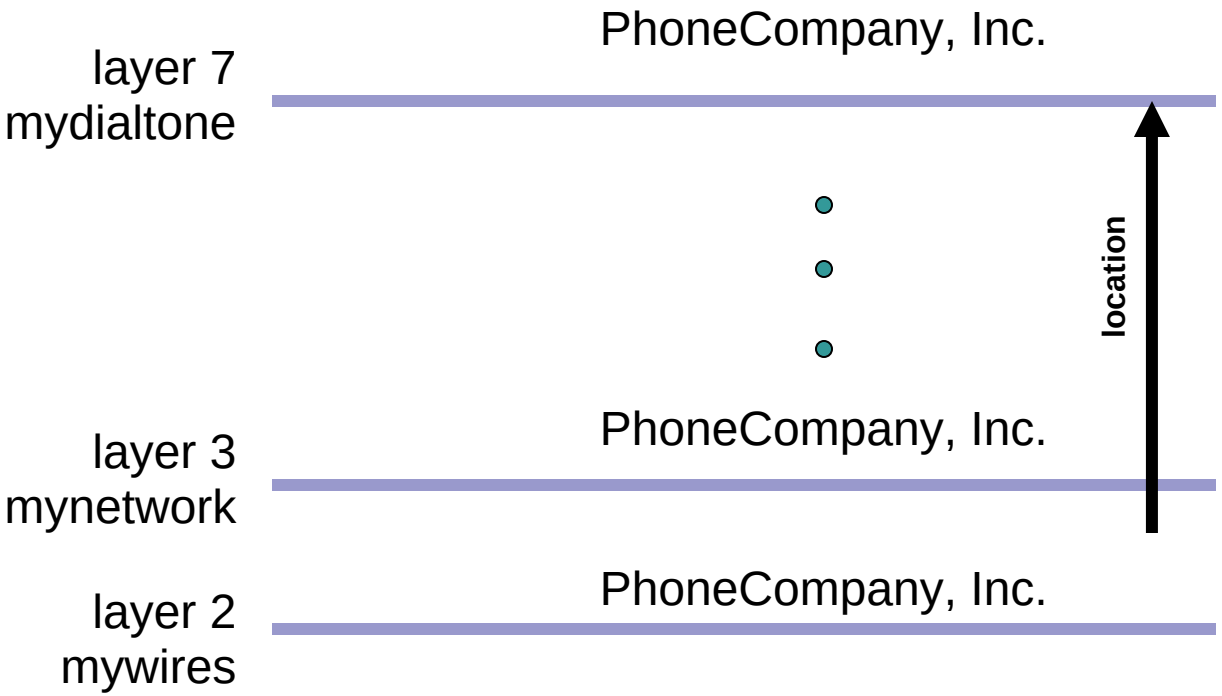
Dumb network – Smart endpoints



Legacy Architecture(s)

Smart network – Dumb endpoints

OSI Model



The end device!

What are we doing?

- **Should we copy the legacy architecture?**

  There are many reasons the old way is dying.

- **Or should we use the Internet architecture?**

  Can anyone name a successful Internet application that requires direct communication with the access and/or network control plane(s)?

  Now is NOT the time to regress!

Location Configuration Protocol

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- A “sighting” protocol as defined in RFC3693
- Where the access provider operates a location server which has a mapping from IP address to location
- Driving Requirement(s)
  - Where implementing DHCP relay agents required for RFC3825/Civil09 is impossible
  - Where implementing DHCP for host configuration is impossible
- Differences between DHCP & LCP
  - DHCP uses relay agent information as key for location lookup
  - LCP uses IP address as key for location lookup
  - LCP utilizes TCP as transport, with TLS as an option

Location Configuration Protocol

- **Works with NAT/PAT**

  Since there is no IP address information within the protocol data, normal address/port substitution mechanisms still work

- **Must execute prior to restricted tunnel initialization**

  Since source IP address is the key and tunnels would change source IP address, LCP must be executed prior to tunnel establishment

Location Configuration Protocol

- **Privacy/Security**
  - **Uses IP address as identifier/key**
  - **Uses source IP address, no dependency on host provided data**
  - **TCP 3-way handshake mitigates simple source-address spoofing**
  - **Recommend TLS to protect transport**

List Comments

- **Not able to implement as written!**
  - **No data formats.**
    - **Client to server – will be in -01**
    - **Server to client - intended to support RFC3825 and Civil09 formats**
- **Doesn't HELD to this?**
  - **HELD does the same but forces layer violations and is more complex (as a sighting protocol).**
- **I was surprised to see this given past discussions**
  - **??**
- **Can LCP return the location object in PIDF-LO format?**
  - **Currently studying – would like more comments**