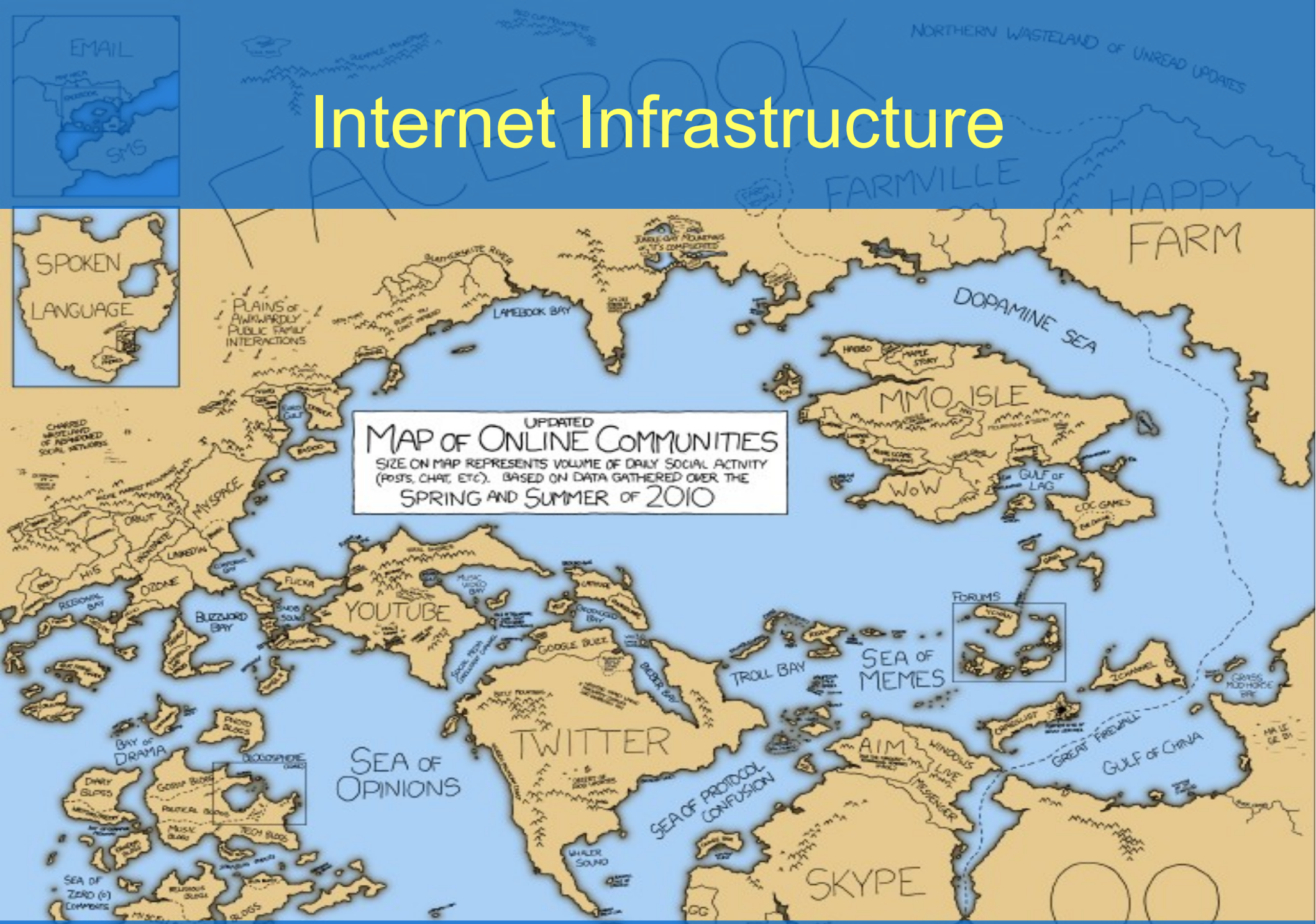


Internet Infrastructure



FACEBOOK

NORTHERN WASTELAND OF UNREAD UPDATES

FARMVILLE

HAPPY FARM

DOPAMINE SEA

MMO ISLE

WoW

GULF OF LAG

LOL GAMES

FORUMS

SEA OF MEMES

TROLL BAY

AIM

TWITTER

The Internet

SKYPE



UPDATED
MAP OF ONLINE COMMUNITIES
SIZE ON MAP REPRESENTS VOLUME OF DAILY SOCIAL ACTIVITY
(POSTS, CHAT, ETC.). BASED ON DATA GATHERED OVER THE
SPRING AND SUMMER OF 2010



CHANGED WASTELAND OF NEGLECTED SOCIAL NETWORKS

PLAINS OF AWKWARDLY PUBLIC FAMILY INTERACTIONS

REGIONAL BAY
BUZZWORD BAY
BAY OF DRAMA
MIS
ORDANE
FLICKR
YOUTUBE
GODDARD BAY
DEER BAY
TROLL BAY

SEA OF ZERO (0) COMMENTS
MISCELLANEOUS
BLOGS

SEA OF GUILTS
POLITICAL BAY
MUSIC VIDEO BAY
GODDARD BAY
DEER BAY
TROLL BAY
SKYPE

SEA OF MEMES
AIM
TROLL BAY
SEA OF GUILTS
POLITICAL BAY
MUSIC VIDEO BAY
GODDARD BAY
DEER BAY
TROLL BAY
SKYPE

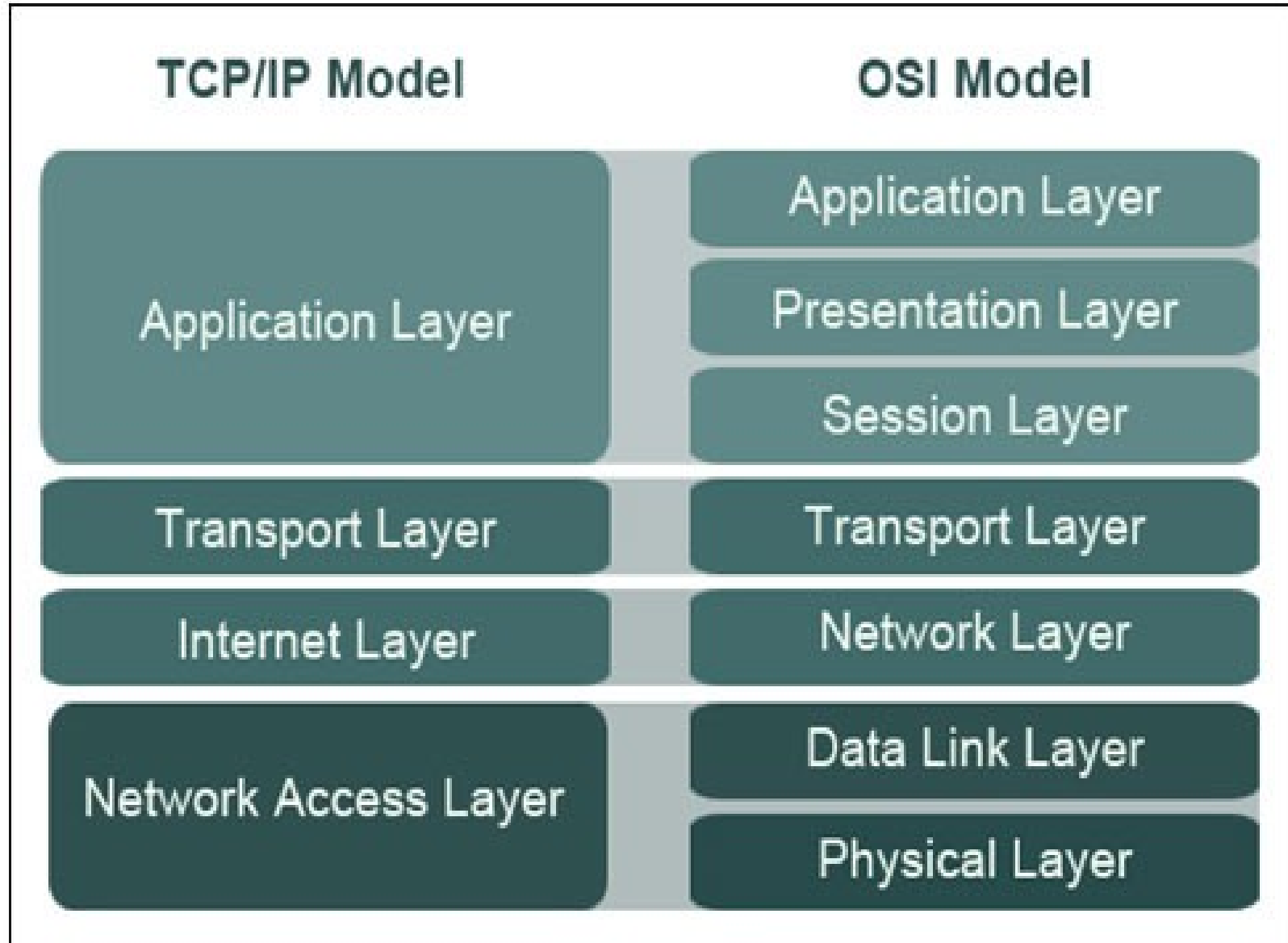
BLAVONSKITE RIVER
LAFEBROOK BAY
JARGON OF TEACHERS WHO'S CONFUSED
ST. ROSE MOUNTAIN
RED CURTAINING
PLAINS OF AWKWARDLY PUBLIC FAMILY INTERACTIONS

NORTHERN WASTELAND OF UNREAD UPDATES
FARMVILLE
HAPPY FARM
DOPAMINE SEA
MMO ISLE
WoW
GULF OF LAG
LOL GAMES
FORUMS
SEA OF MEMES
TROLL BAY
AIM
TROLL BAY
SEA OF GUILTS
POLITICAL BAY
MUSIC VIDEO BAY
GODDARD BAY
DEER BAY
TROLL BAY
SKYPE

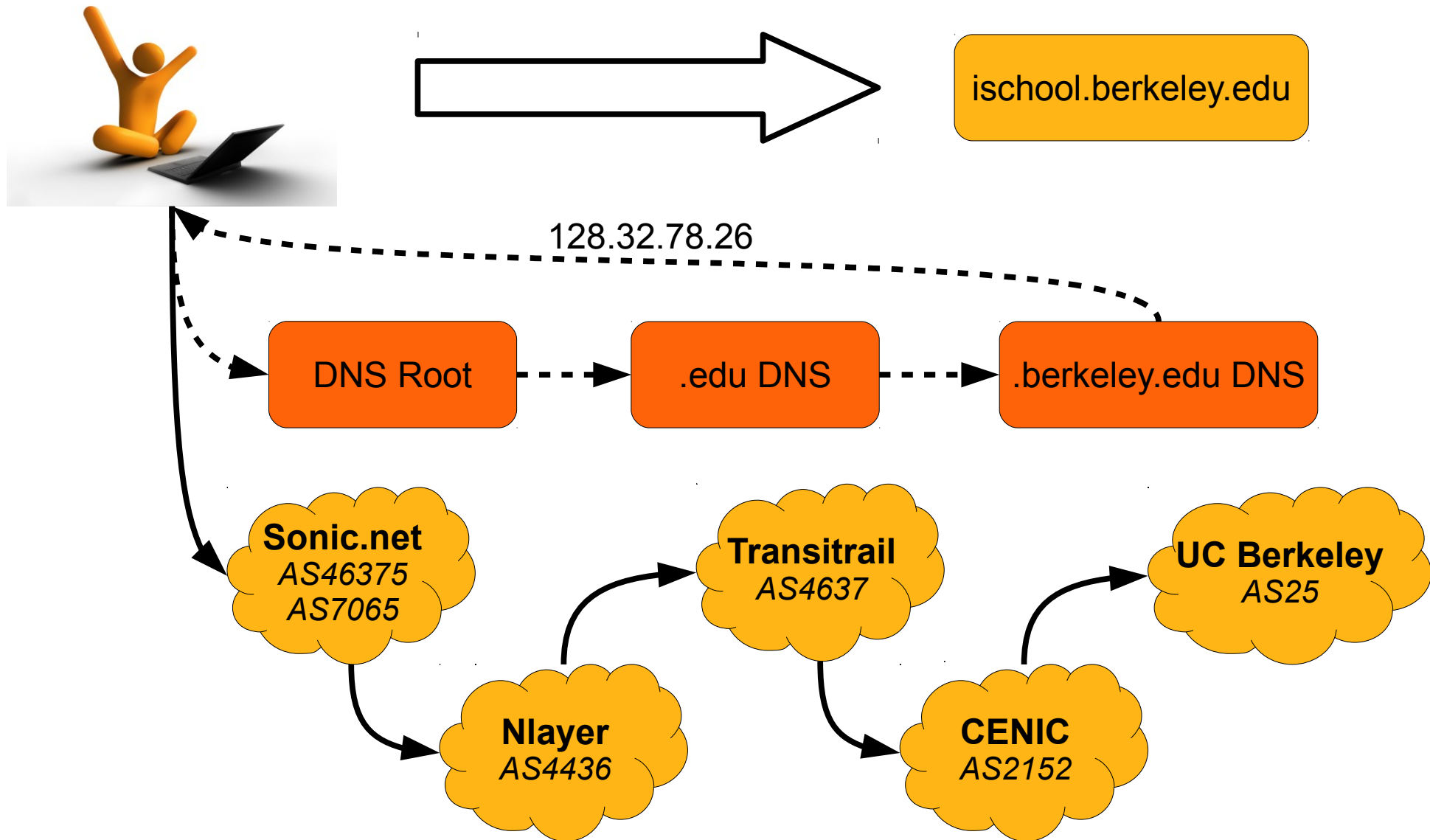


The Internet

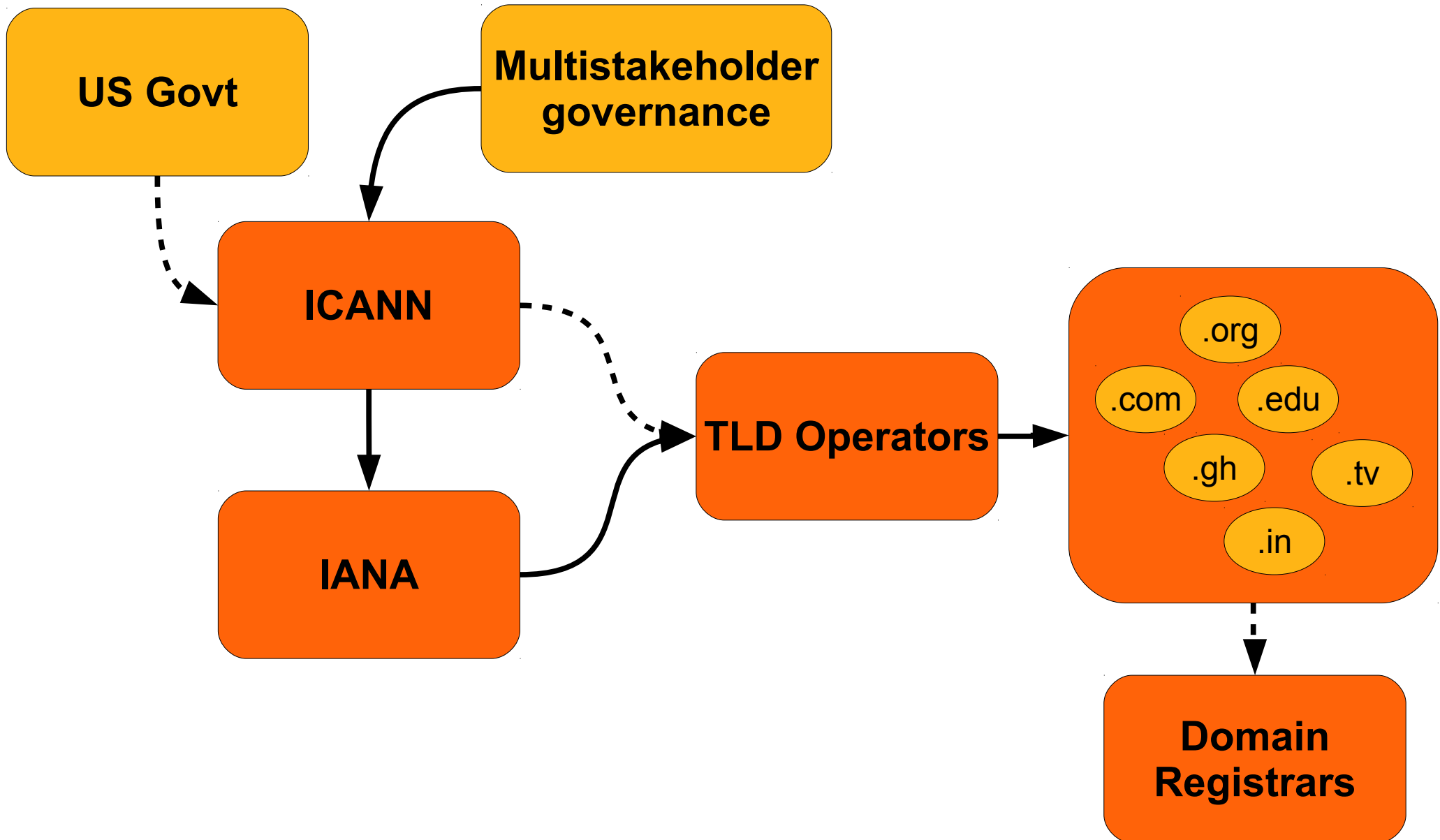
Network Layers



Getting from here to there...



Where do domain names come from?



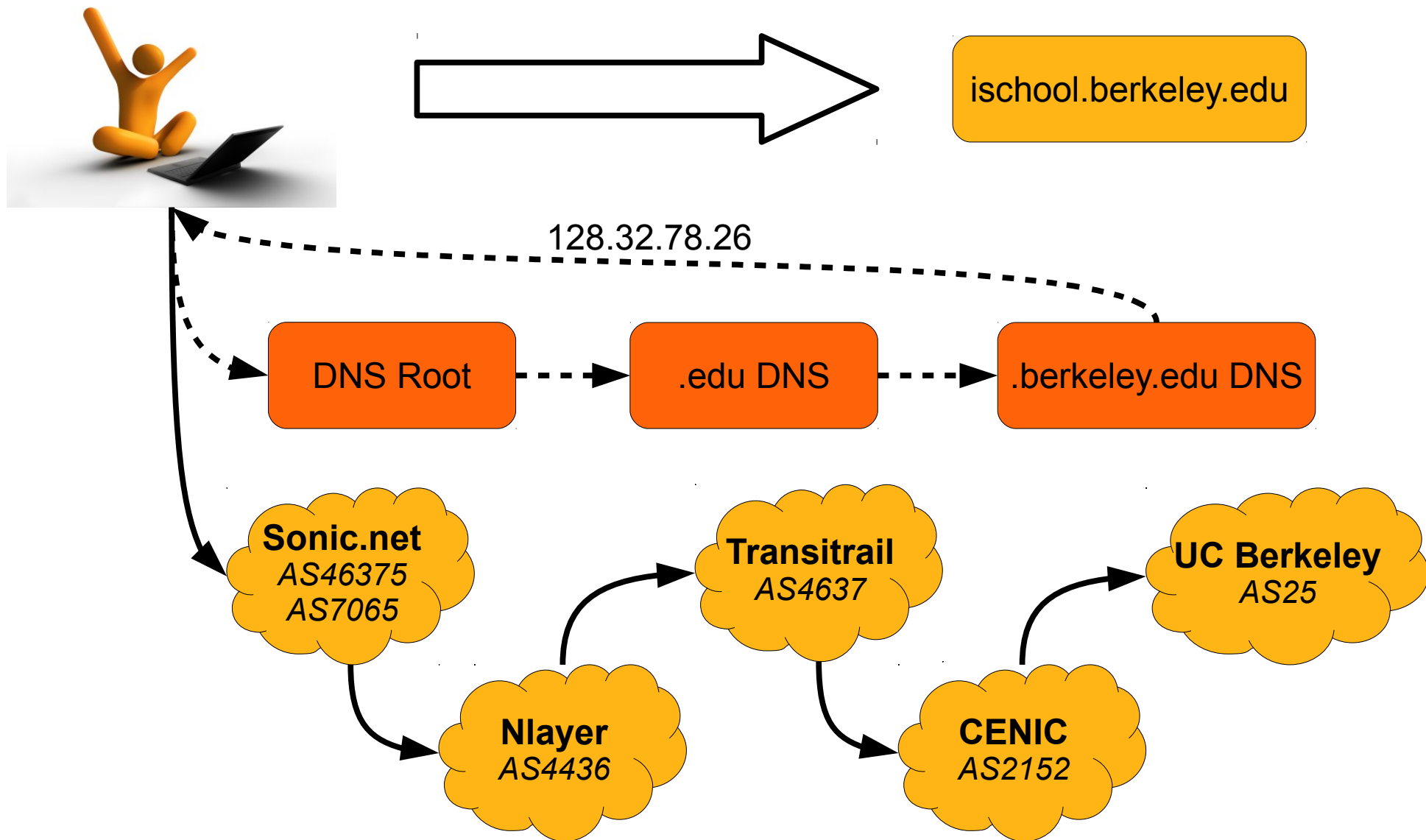
DNS Root Servers



DNS Root Server Operators

Root Server	Operator
A	VeriSign
B	Information Sciences Institute
C	Cogent Communications
D	University of Maryland
E	NASA Ames Research Center
F	Internet Systems Consortium
G	US DOD Network Information Center
H	US Army Research Lab
I	Netnod
J	Verisign
K	RIPE NCC
L	ICANN
M	WIDE Project

Getting from here to there...



Getting from here to there...

```
traceroute -A ischool.berkeley.edu
```

```
1 DD-WRT (192.168.3.1) [AS65190] 1.248 ms 1.506 ms 2.577 ms
2 192.168.10.254 (192.168.10.254) [AS8151/AS28513] 4.011 ms 4.357 ms 4.463 ms
3 70-36-134-1.dsl.dynamic.sonic.net (70.36.134.1) [AS46375] 40.782 ms 42.330 ms 43.952 ms
4 70-36-200-161.static.sonic.net (70.36.200.161) [AS46375] 44.719 ms 45.997 ms 47.170 ms
5 po2.cr1.hywrca01.sonic.net (70.36.205.6) [AS46375] 48.417 ms 49.099 ms 50.313 ms
6 200.cr1.snsjca11.sonic.net (70.36.205.74) [AS46375] 52.116 ms 41.300 ms 41.412 ms
7 0.xe-7-0-0.gw3.equinix-sj.sonic.net (64.142.0.105) [AS7065] 43.355 ms 44.628 ms 45.998 ms
8 0.xe-7-0-0.gw.pao1.sonic.net (64.142.0.186) [AS7065] 47.841 ms 48.292 ms 49.360 ms
9 xe-1-0-6.ar1.pao1.us.nlayer.net (69.22.130.85) [AS4436] 53.107 ms 53.786 ms 53.977 ms
10 ae0-70g.cr1.pao1.us.nlayer.net (69.22.153.18) [AS4436] 54.176 ms 54.439 ms 55.320 ms
11 paix.tr01-plalca01.transitrail.net (198.32.176.15) [AS4637] 56.121 ms 56.823 ms 58.281 ms
12 137.164.131.62 (137.164.131.62) [AS2152] 41.741 ms 43.829 ms 43.149 ms
13 dc-svl-core1--svl-px1-10ge-3.cenic.net (137.164.46.14) [AS2152] 44.659 ms 46.081 ms
47.424 ms
14 dc-svl-agg1--svl-core1-10ge.cenic.net (137.164.47.120) [AS2152] 48.821 ms 49.496 ms
50.822 ms
15 dc-ucb--svl-agg1-10ge.cenic.net (137.164.50.19) [AS2152] 53.611 ms 54.236 ms 55.442 ms
16 t1-3.inr-202-reccev.Berkeley.EDU (128.32.0.67) [AS25] 57.084 ms 57.360 ms 58.104 ms
17 t1-1.inr-211-srb.Berkeley.EDU (128.32.255.43) [AS25] 58.873 ms 60.463 ms 60.978 ms
```

The Internet as a Postal Map

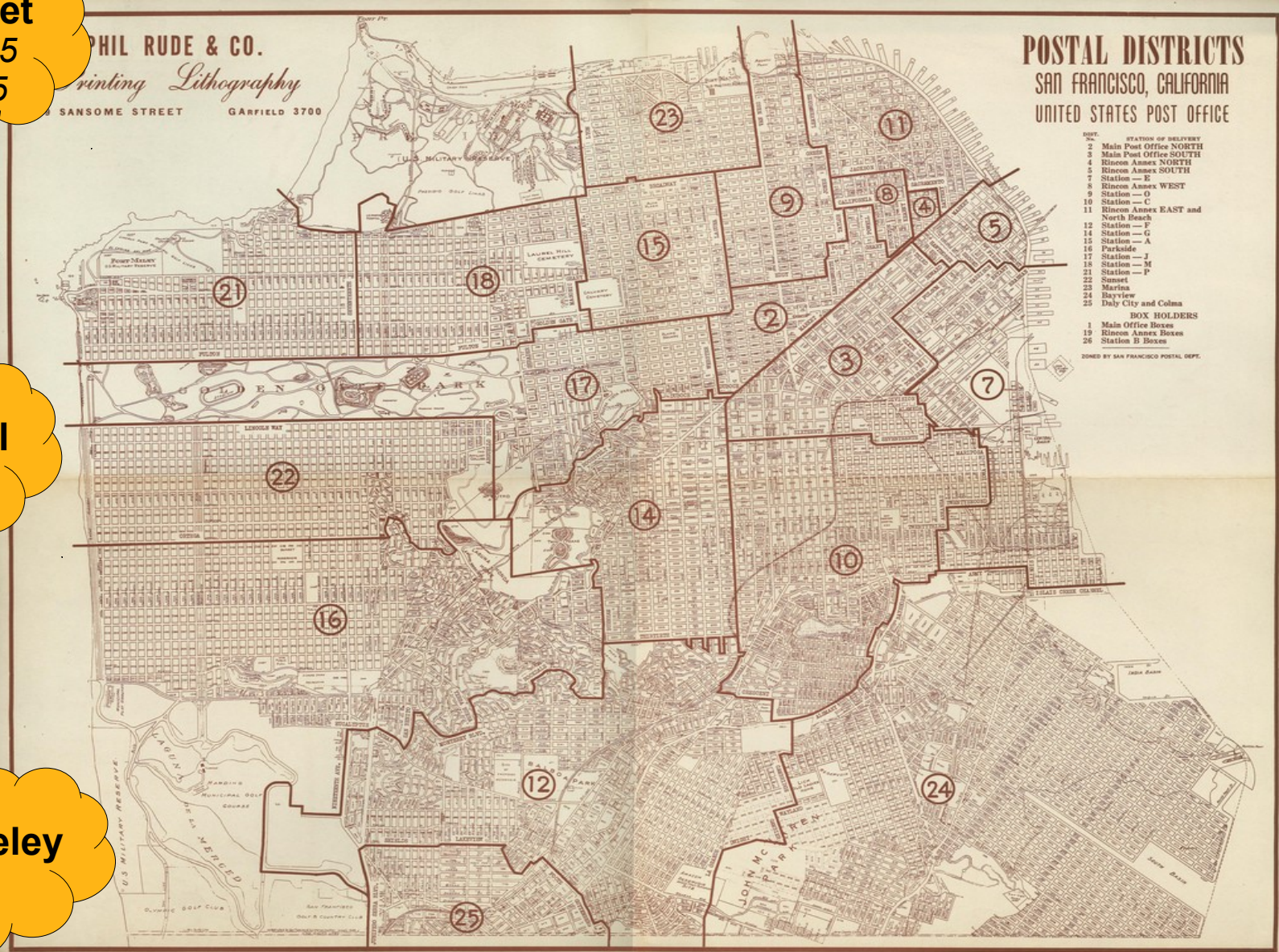
Sonic.net
AS46375
AS7065

Nlayer
AS4436

Transitrail
AS4637

CENIC
AS2152

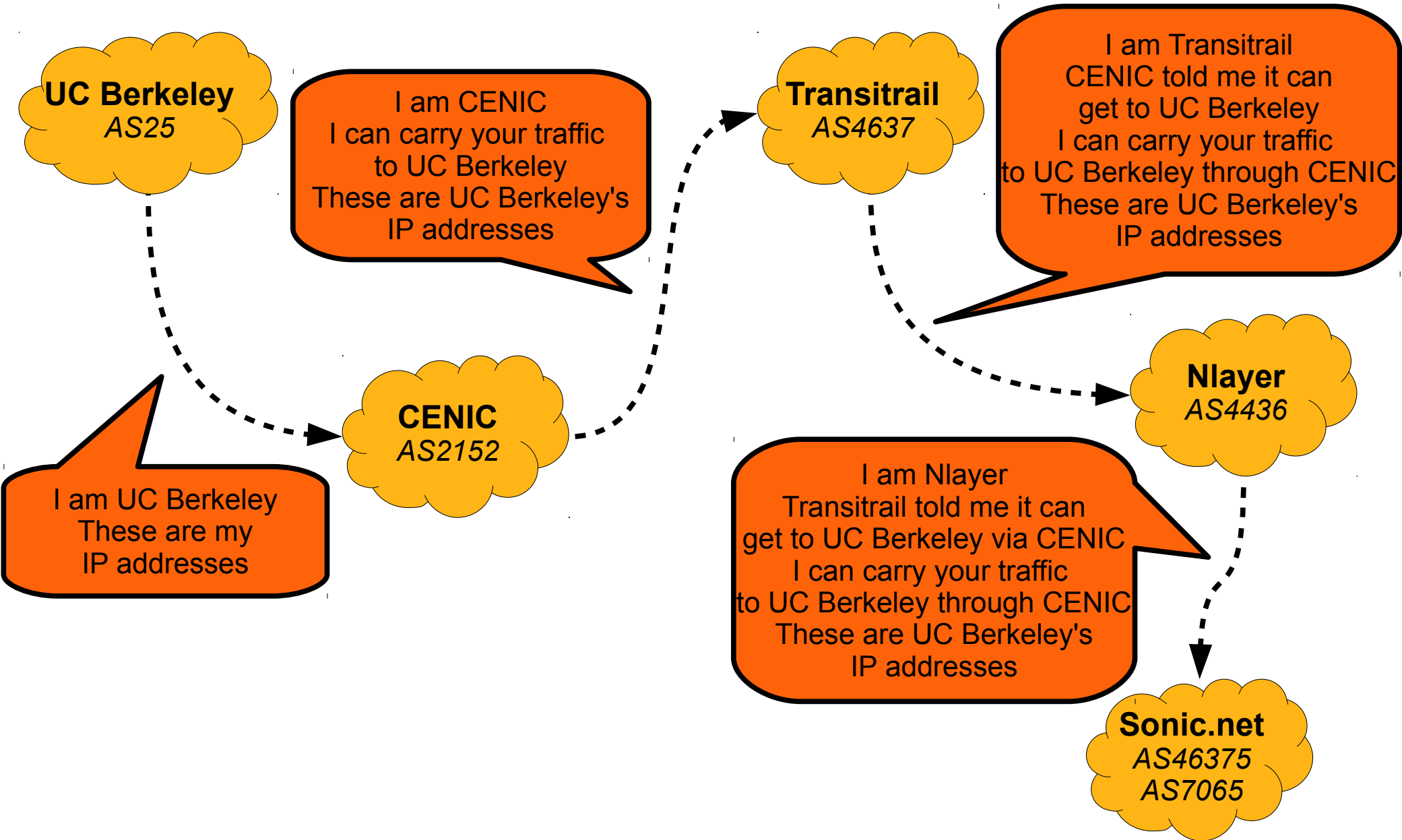
UC Berkeley
AS25



POSTAL DISTRICTS
SAN FRANCISCO, CALIFORNIA
UNITED STATES POST OFFICE

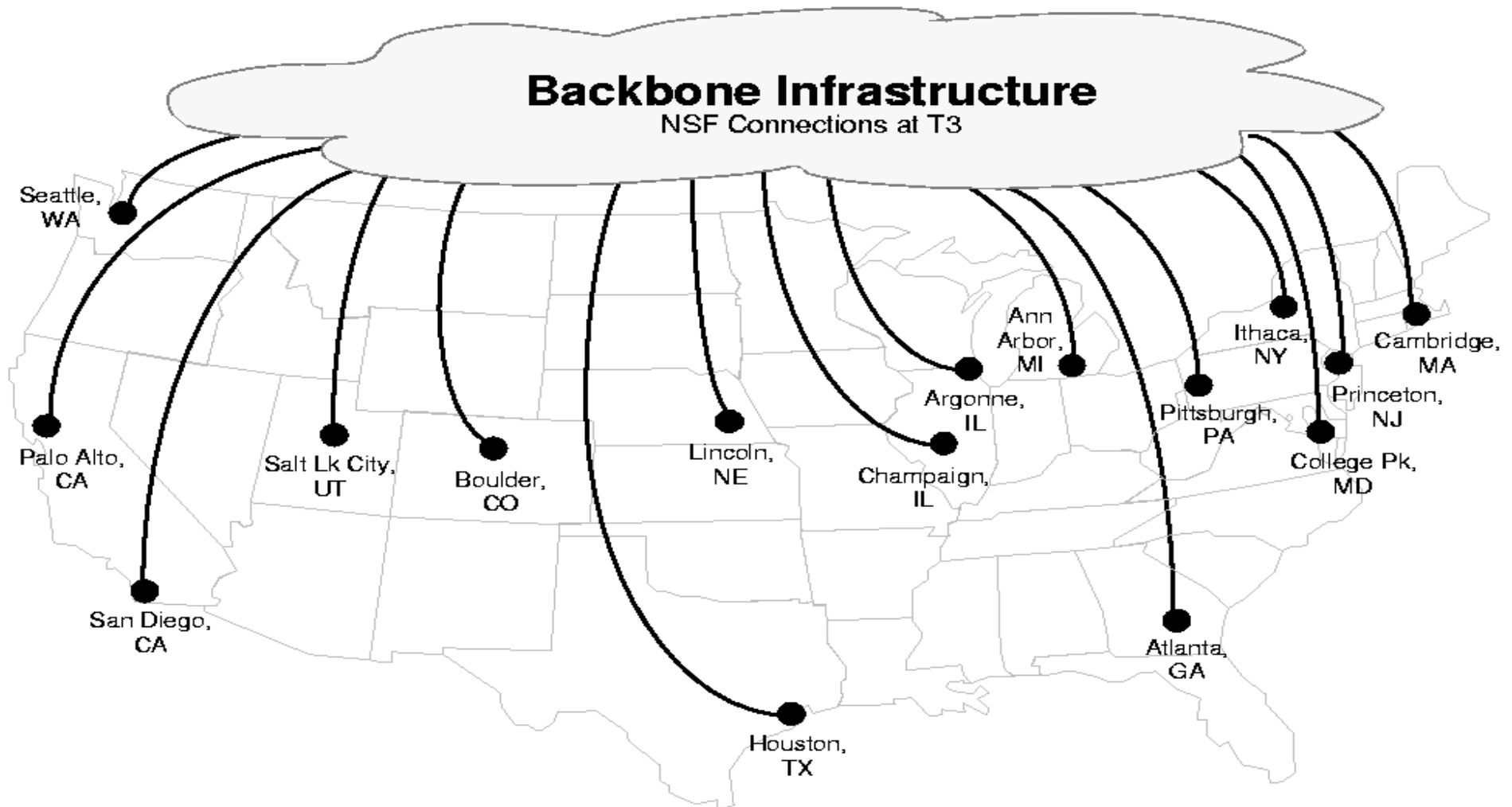
- STATION OF DELIVERY
- 2 Main Post Office NORTH
 - 3 Main Post Office SOUTH
 - 4 Rincón Annex NORTH
 - 5 Rincón Annex SOUTH
 - 7 Station — E
 - 8 Rincón Annex WEST
 - 9 Station — O
 - 10 Station — C
 - 11 Rincón Annex EAST and North Beach
 - 12 Station — F
 - 14 Station — G
 - 15 Station — A
 - 16 Parkside
 - 17 Station — J
 - 18 Station — M
 - 21 Station — P
 - 22 Sunset
 - 23 Marina
 - 24 Bayview
 - 25 Daly City and Colma
- BOX HOLDERS
- 1 Main Office Boxes
 - 19 Rincón Annex Boxes
 - 26 Station B Boxes
- PRINTED BY SAN FRANCISCO POSTAL DEPT.

BGP: Inter-Domain Routing

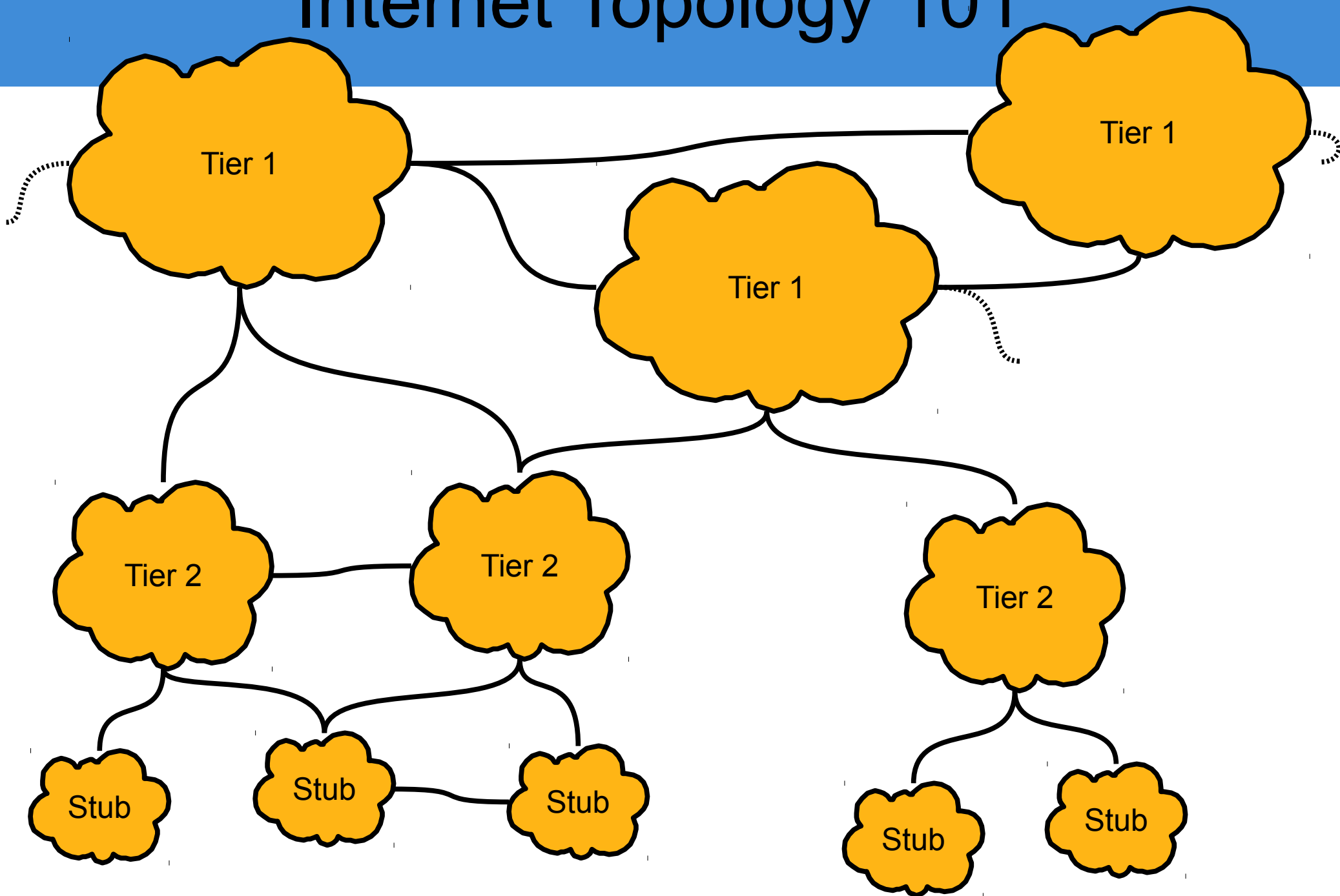


NSFNET

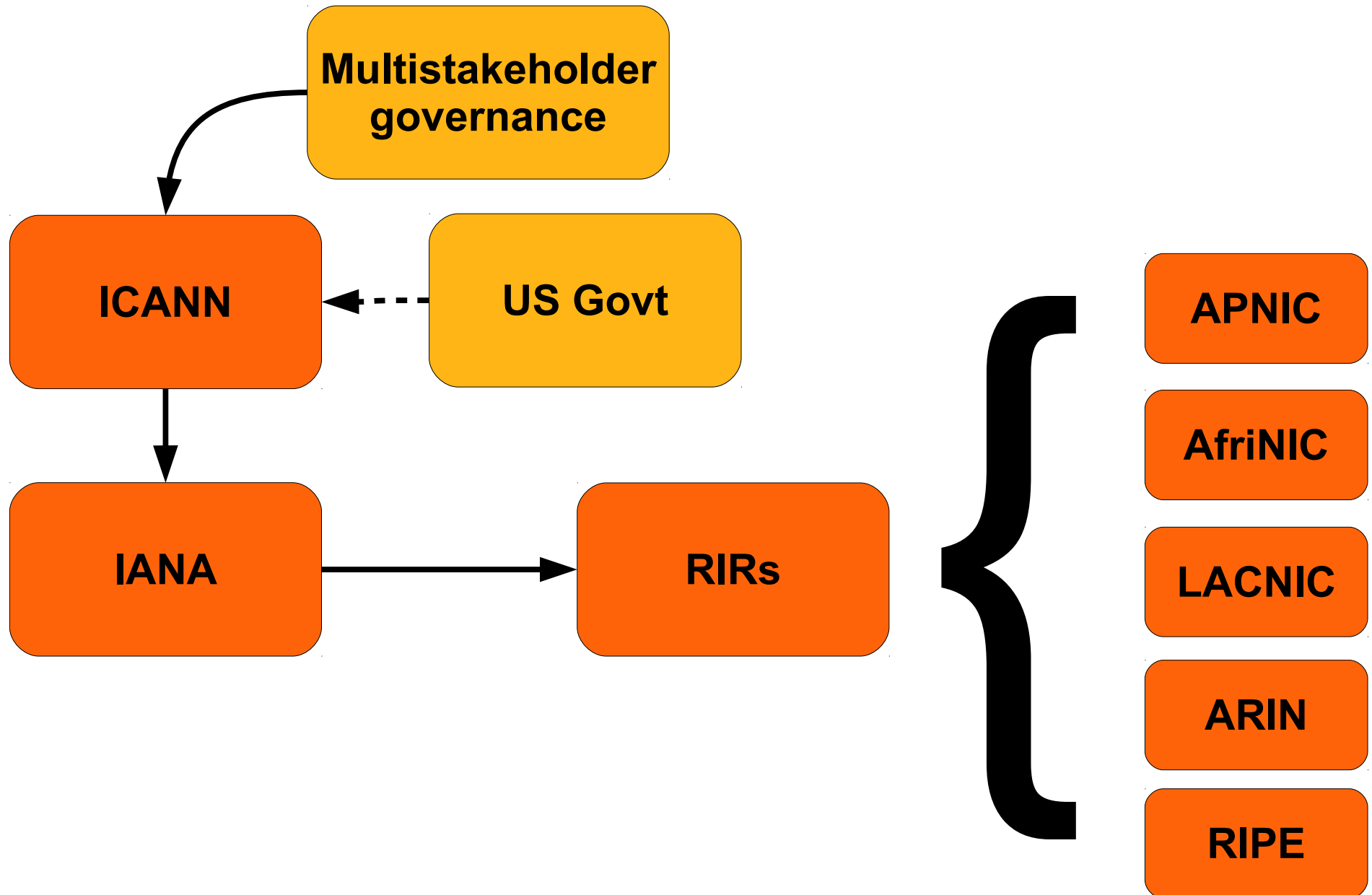
NSFNET 1991



Internet Topology 101



Where do IP addresses come from?





The Internet



The Internet

Open Protocols, Transparent Networks?

- **Standards development**
 - IETF, W3C
- **Institutional structures**
 - ICANN regime
- **Topological arrangements**
 - Interior Gateway Protocols: IS-IS, RIP, OSPF, etc
 - Exterior Gateway Protocols: BGP

