- PIM
- EXPRESS
- Digital Fountain
- Project Discussions (11:20 - 11:50)

PIM

- sparse mode
- explicit joins towards RP
- optional switch to SPT for a given source

State

- number of sources X
  number of groups ✓

- Aggregation

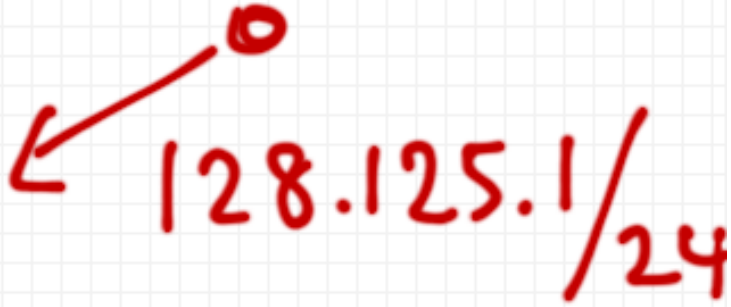
USC { 128.125.1.1
      .255

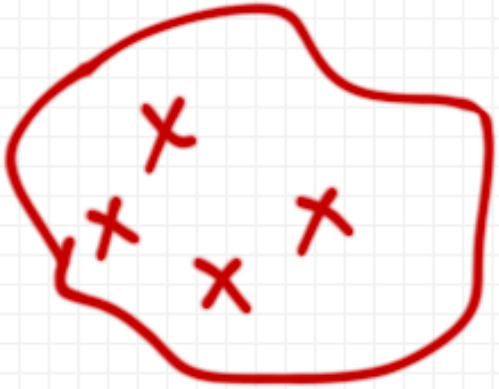
128.125.1/24

256

1 Mb/s ~ 1 Gbps

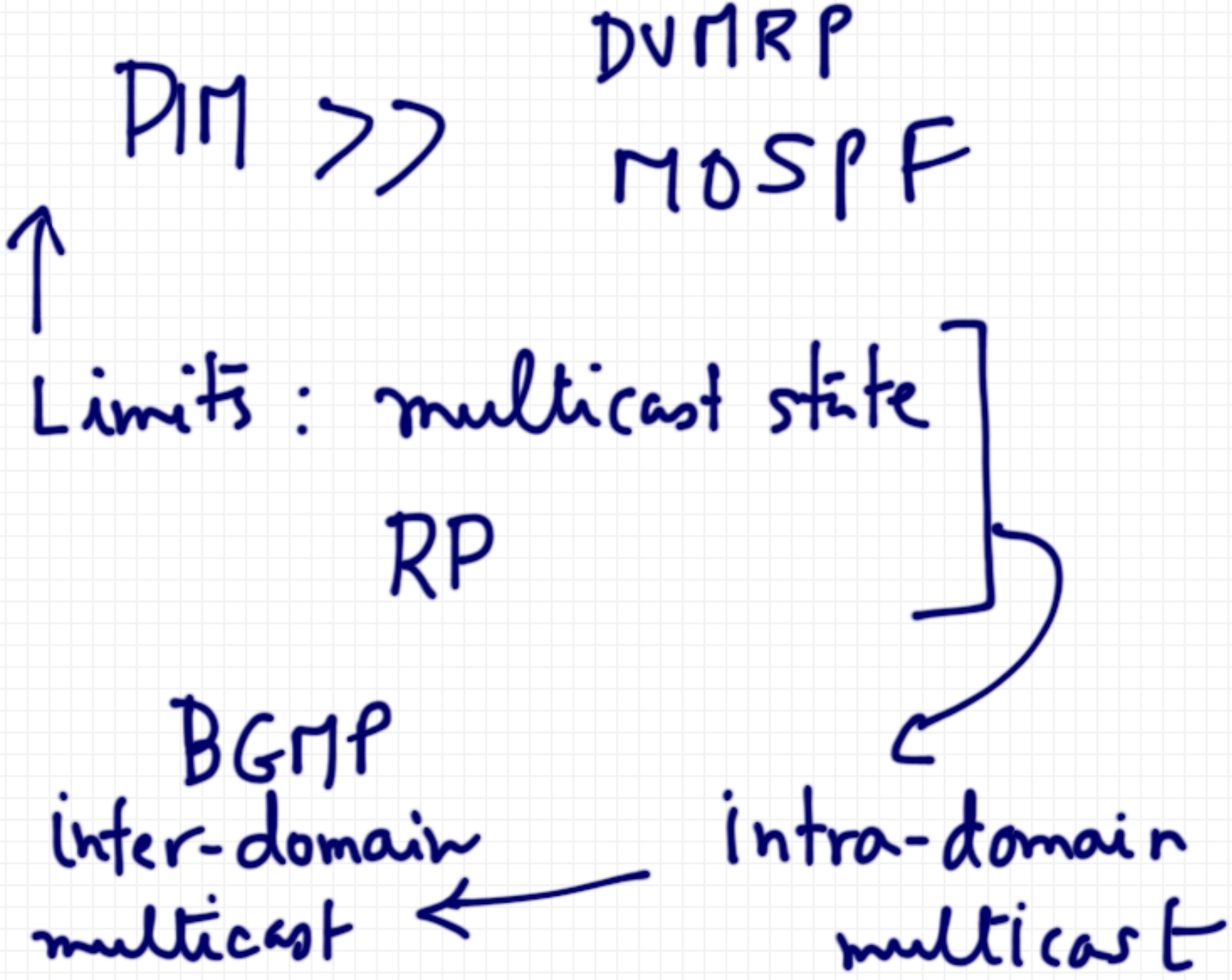
1000





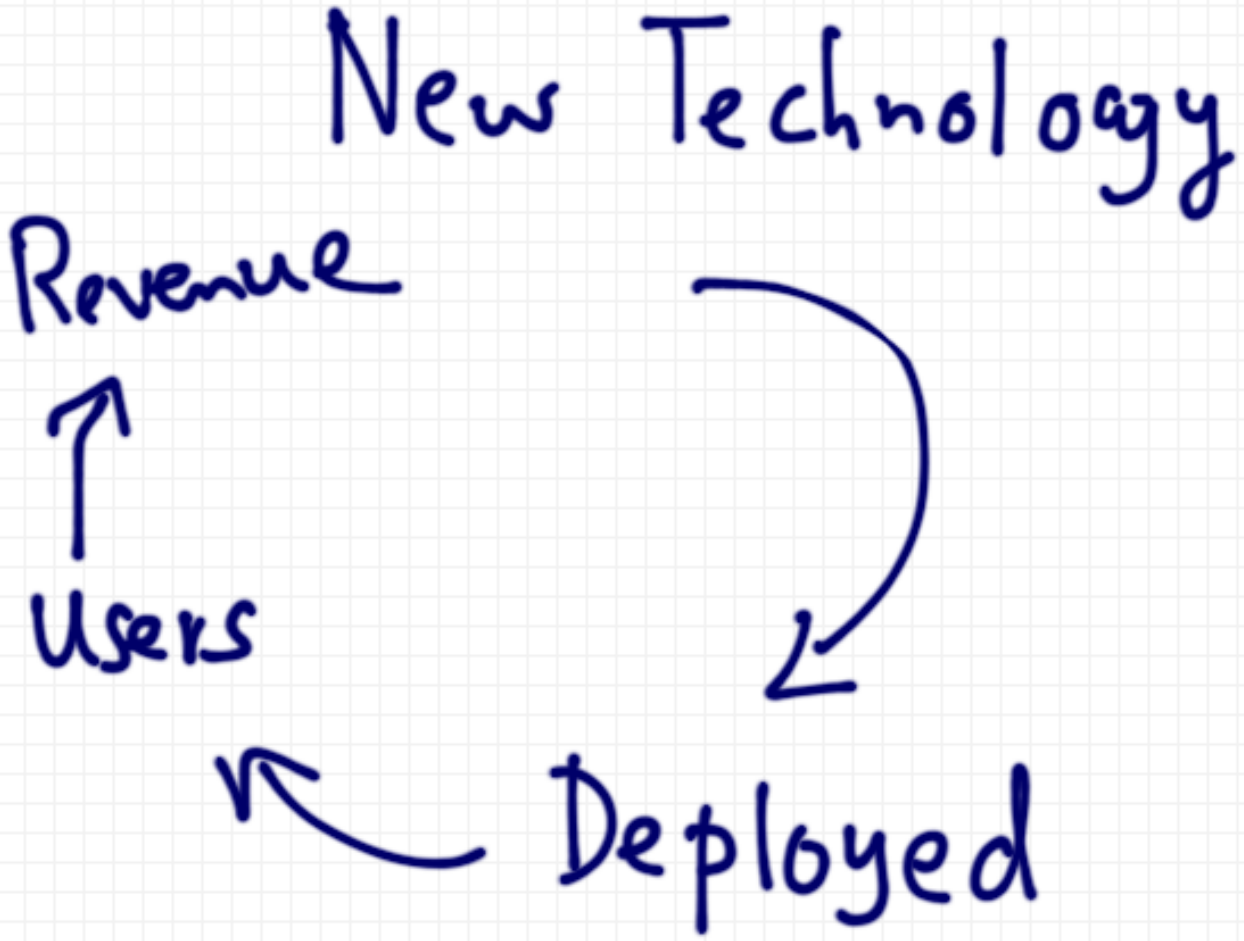
G_1 224.1.1.1

G_2 224.1.1.2


DVMRP
PIM >>
MOSPF
Limits : multicast state
RP
BGMP
inter-domain
multicast
intra-domain
multicast

Problems w/ IP multicast

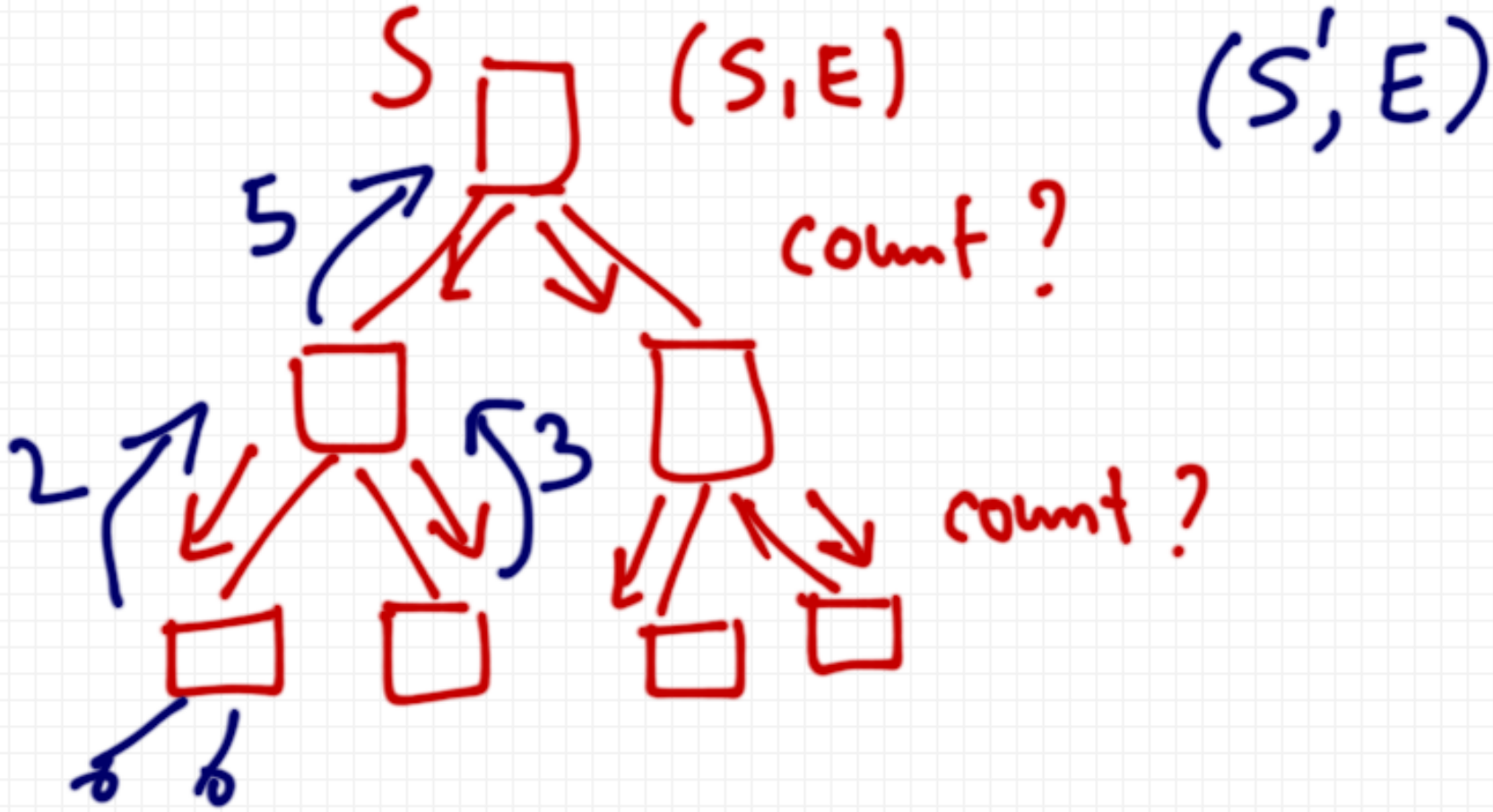
- Billing ✓
- Source Authentication ✓
- G has to be globally unique ✓
- Scaling

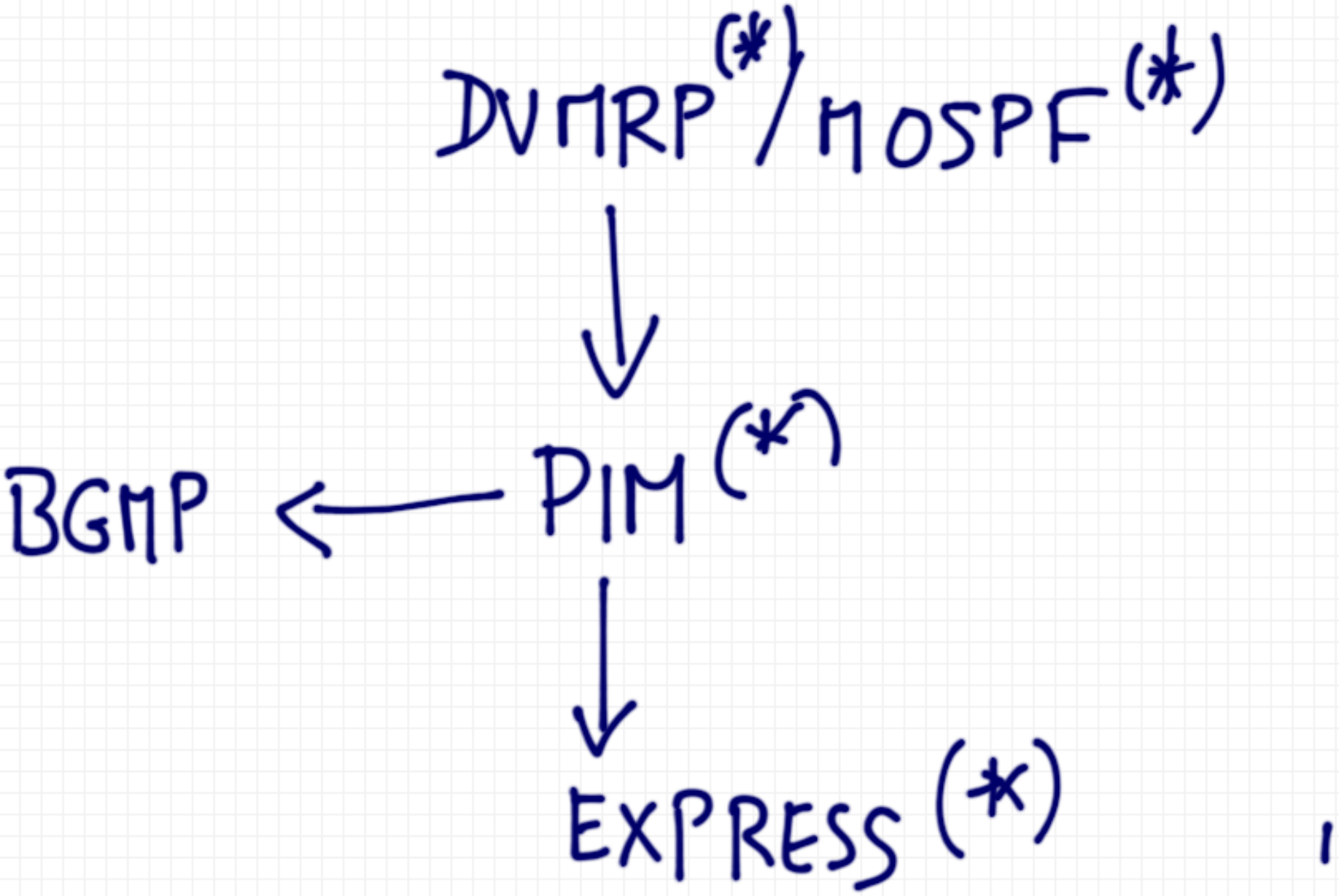

New Technology
Revenue
Users
Deployed

Restrict the Service Model

- Single Source S
- Channel (S, E)

$\Longrightarrow$ PIM-Style explicit joins


S
(S, E)
(S', E)
5
count ?
2
3
count ?


DVMRP (*) / MOSPF (*)
BGMP
PIM (*)
EXPRESS (*)

Collaboration

- Netmeeting
- WebEX

Lectures

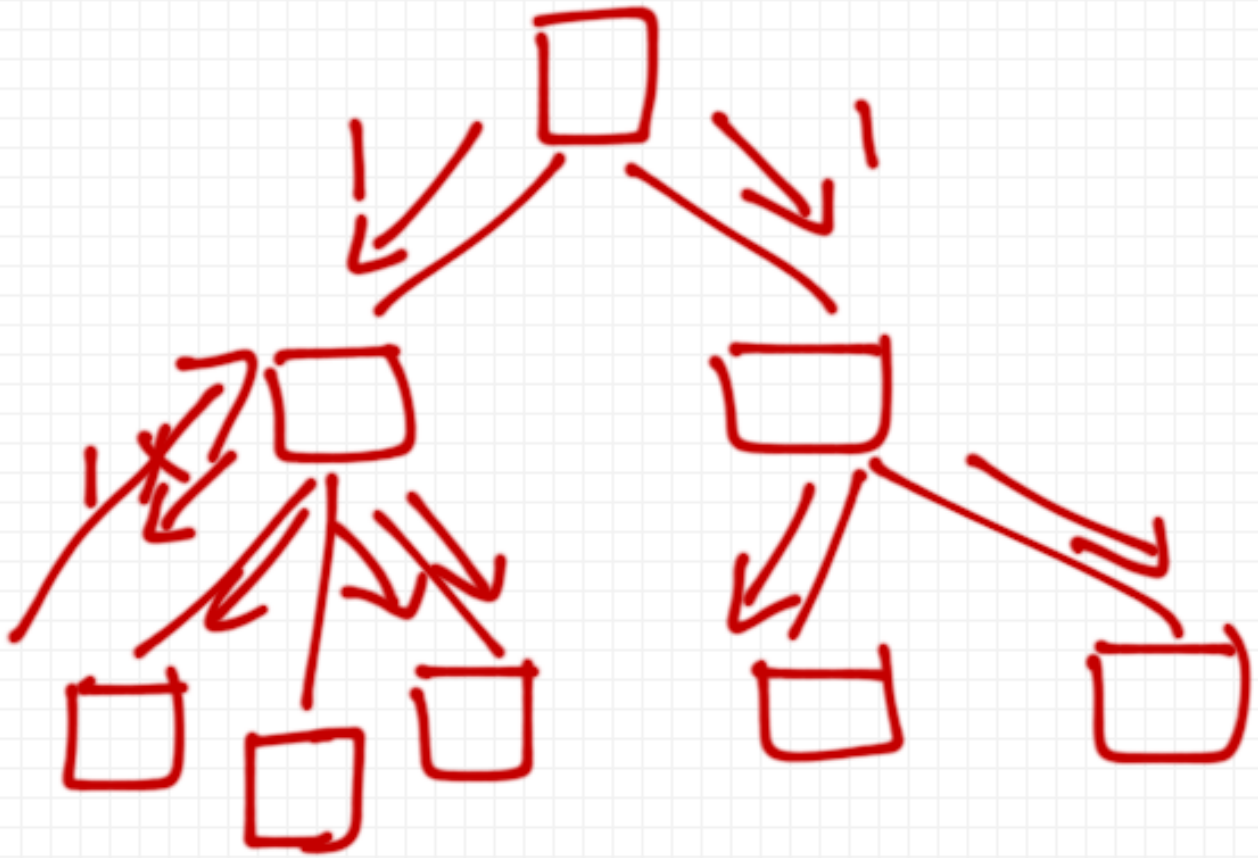
- Content Distribution Network

No infrastructure charges

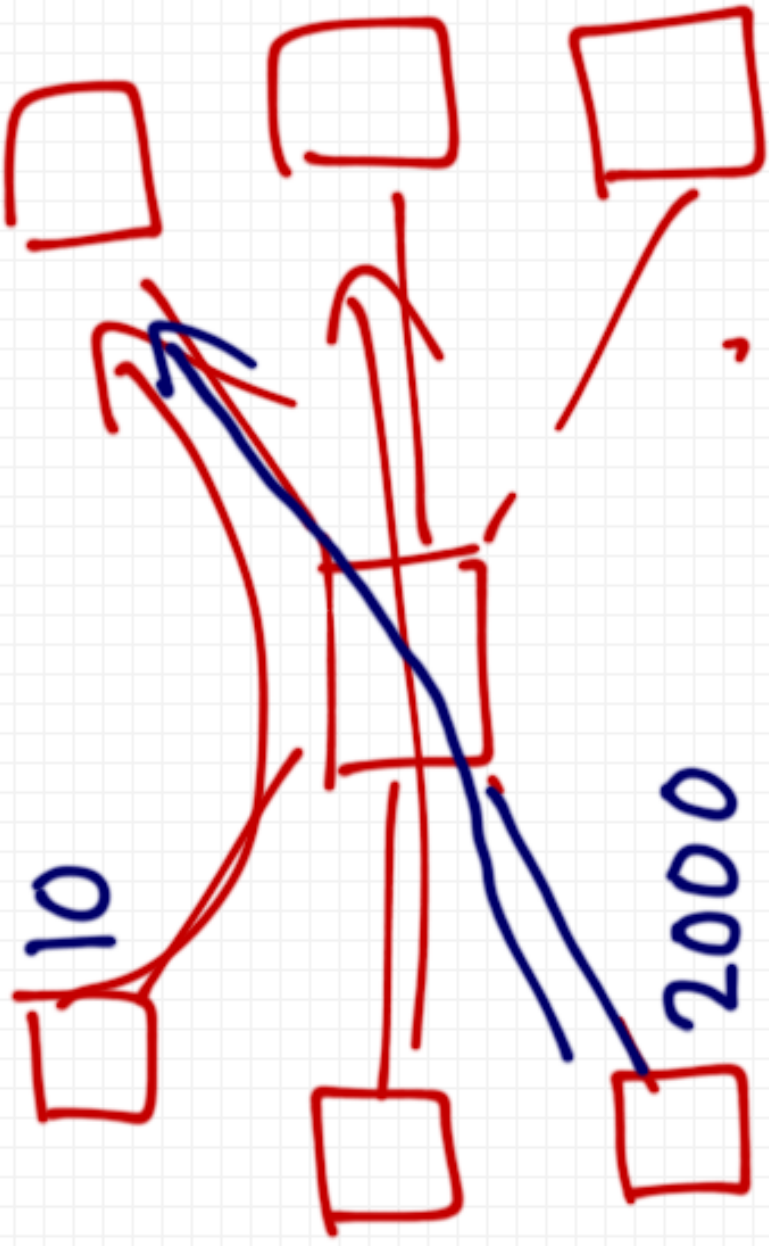
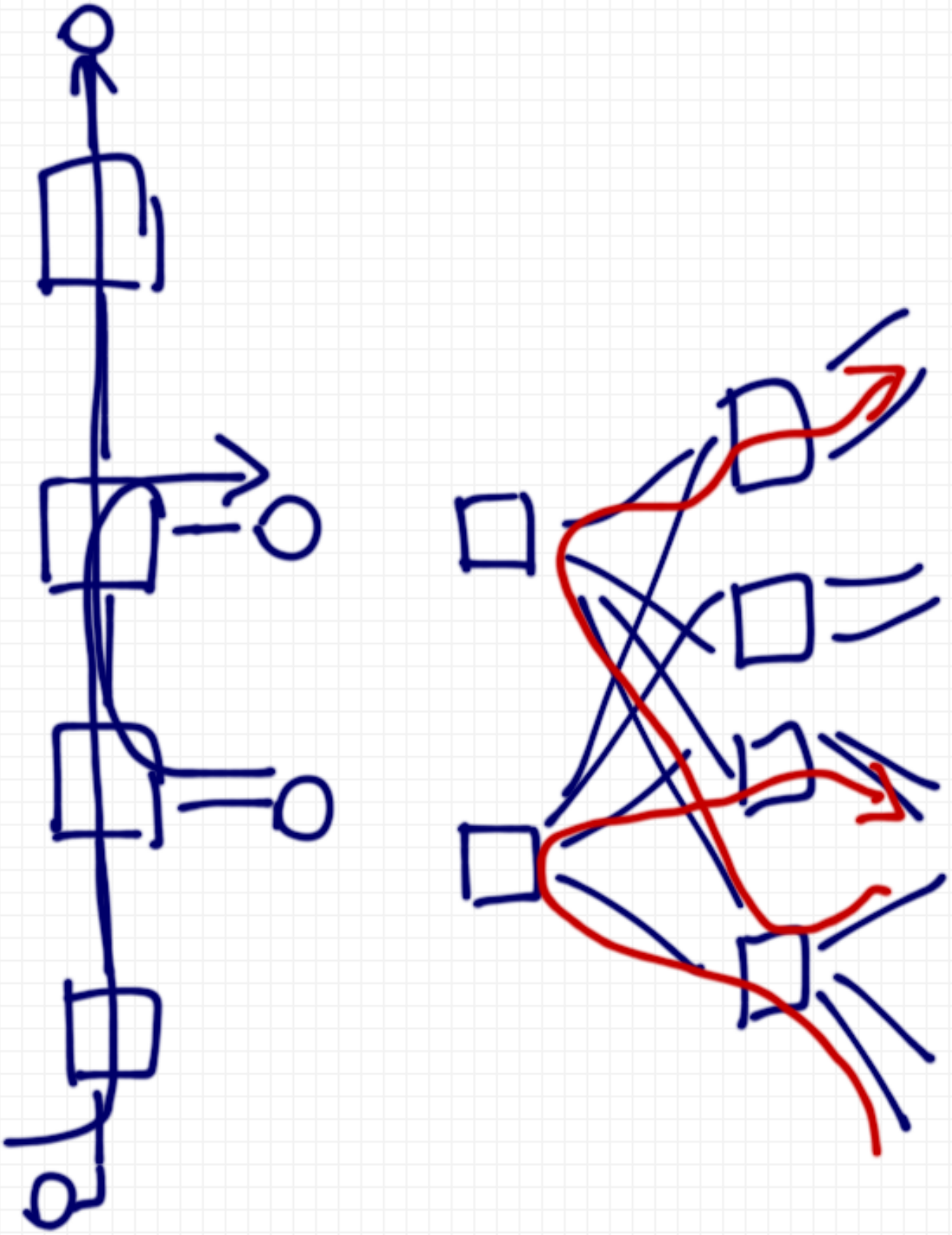
Bulk Data Distribution

- P2P (Bit Torrent)

Digital Fountain



Subcast


10
2000