P2P Live streaming

Problem:- Free Riding

Solution:- Incentive mechanism

- Credit based
- Reputation based.

Reputation based:-

→ Developed the algorithm with few questions still unanswered.

↔ This algorithm will take care of free-riding problem, malicious nodes problem, peer heterogeneity, peer dynamics (churn rate).

→ Questions, I am trying to explore-

(1) Time required to achieve stable topology.

(2) value of 'α' decay factor. What is the optimum value of α.

(3) How many optimum no. of copies of reputation value of a nodes to avoid problem of all root nodes to be malicious.

(4) Problem of flash crowd.

(5) Stability problem in terms of topology (stability in terms of peers' satisfaction already discussed)

Credit based

① Layered video as an incentive mechanism
(in addition with different incentive mechanism)

Implementations

① Taking reputation
(Monetary based system rely on reputation based system)
→ Peers will be charged based on the reputation.
→ Peers having higher reputation will get better quality of video and also they will charged less.

② Without taking reputation.
(Simply design like a trading system)

② Design like a trading system.

Third party
(We will design an algorithm keeping third party as an administrator)

With crypto currency
(

Third party:

→ As an administrator, we are providing platform (app) for to the users for streaming. Any users user (peer) can do live streaming) We as an administrator keeping track of payments.

→ Try to build an alternative of Hotstar, ~~as~~ zoom, google meet or any other live ~~of~~ video channels. In this, we need ample amount of server to handle the crowd and also only application owners are earning.

→ Our app also attracts the users because as a user (peer). If you are forwarding the stream, they will also earn. (marketing strategy).

→ How everyone in the system will earn —

(1) Administrator of the app — tracking record of all payments and transactions.

(2) Source peer according to their capability

(3) Peers in the system by forwarding to other peers.

(4) Here, we don't need any game theory or any bargaining thing, because for that the administrators be taking care of everything.

(5) Now as a administrators point of views, There can be many questions like —

(1) How much to charge for a particular quality of video.

⇒ Here, we will be using layered streaming, because that will provide heterogenity to the system and its peers.

(2) If peers are forwarding, then acc. to quality how much rebate or refund should be given.

(3). — — —