Hot Research Topics in Mobile Video

"New Mobile Delivery Framework Needed for On-Campus Video Distribution"

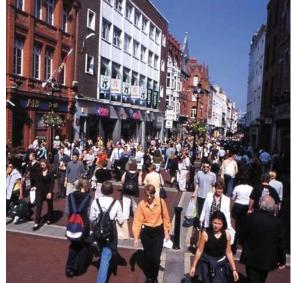Klara Nahrstedt

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Mobile Communities

Mobile Communities on University Campus

Mobile Learning Communities

A/V Lectures are being recorded and made available to on-campus and off-campus (online) students

AV Lectures are searchable

A/V Lectures can be annotated

A/V Lectures needed by groups

Traditional Video Distribution Techniques

- Traditional **Peer-to-Peer Video Streaming** (PPLive-like Streaming) won't work in mobile learning communities due to
  - Resource diversity of mobile platforms
  - Network diversity of mobile platforms
  - Intermittent Connectivity
- Traditional **CDN approaches for video streaming** (Akamai-lime Streaming) won't work in mobile learning communities due to
  - User Mobility
  - Network Interference
  - Intermittent Connectivity
- Traditional **Client-Server approaches for video streaming** (HTTP-like streaming) won't work in mobile communities due to
  - Scale
  - Bandwidth limitation

Need New Mobile Video Delivery

- How
  - To utilize **additional context information**
  - To utilize **hybrid networks** such as cellular and WiFi
  - To adapt between client-server and P2P **distributed paradigms**
  - To consider **intermittent connectivity** between store-and-forward and store-carry-forward paradigms
  - To reconsider **P2P chunk management**, allocation, chunk scheduling, advertising, …
  - To reconsider **CDN caching, buffering, routing**
  - To reconsider **client-server scheduling** of video among heterogeneous clients over diverse networks.