HORST – Home Router Sharing Based on Trust

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**Data Offloading to WiFi**
- Access to WiFi for trusted friends
- Guidance of users to near WiFi access networks
- Scheduling of delay-tolerant transmissions

- Reduction of load on 3G link
- Higher bandwidth and lower energy consumption by using WiFi

**Content Caching/Prefetching**
- Prediction of content consumption
- Usage of information from online social networks and access history

- Exploitation of mobility patterns
- Content placement near users
- Less delay and higher bandwidth for users

**Content Delivery**
- Content delivery overlay of home routers
- Delivery based on network condition, resource locations, and delay tolerance

- Load balancing and saving of transit traffic for ISPs
- Improved service and QoE for users

**Firmware**
- Provision of social information (position data, communication data, request data)
- Automatic access request and connection to shared WiFi access networks
- Management of handover between different interfaces (3G, WiFi)
- Transmission scheduler for delay-tolerant content

**Mobile Device App**
- Provision of social information (position data, communication data, request data)
- Automatic access request and connection to shared WiFi access networks
- Management of handover between different interfaces (3G, WiFi)
- Transmission scheduler for delay-tolerant content

**Online Social Network App**
- User management (mapping of users and devices)
- Provision of social information (personal data, communication data, position data, content popularity, content spreading)
- Computation of trust scores
- Recommendation of near WiFi access networks
- WiFi access requests and sharing

**Decision Entity**
- Prediction of owner’s content consumption based on social information:
  - Location
  - Activity patterns
  - Interests
  - Content popularity
  - Content spreading
- Selection of best content resource based on:
  - Overlay information (content locations, AS topology)
  - Usage information (request data, utilization, connected users)
  - Traffic measurements
- Periodical checking if cached content is relevant, and cache replacement

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**Social Information**

**Usage Information**

**Overlay Information**

**Internet**

**Content Pull Instructions**

**Cache Replacement Instructions**

**Use Cases**

**Functionality**

**Components**

**Funded by**

[Link to project website]