

P2PSIP: A new scenario for deploying collaborative Internet-based services

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A COLLABORATIVE MULTIMEDIA INTERNET LANDSCAPE

Evolution of Internet infrastructure and Services

- From Client/Server models to P2P
- Content sharing
- Infrastructure sharing
- From network-application pairing to Technology-agnostic applications
- From text or voice Internet-based communication to multimedia
- From network-based access to NGN
- From major producers to collaborative content

Common issues

- Specialization on different values of multimedia content
- Central coordination only providing functionality and control (except pure P2P file sharing)
- Efficient network efficient and extensibility in general
- Proprietary or standard P2P protocols
- Open to incorporate users, but not to interconnect with other industries



P2PSIP IMPACT ON BUSINESS & EXPLOITATION MODELS

P2P applications: File sharing and Internet TV

- Not extended mainly to other file downloading with basic IM capabilities or Internet TV
- File sharing: Highly specific application, evolution is thus content difficult to interconnect or justify
- IPTV: P2PSIP Shanghai in the addition of new multimedia functionality
- Modular design
- 3rd party development ("plug-in")
- Federation with 3rd party applications

Interpersonal communication applications

- Simplify the addition of new multimedia functionality
- Modular design
- 3rd party development ("plug-in")
- Federation with 3rd party applications
- Arguments scalability & efficiency with P2P technology
- Simplify community interaction
- Smaller users can benefit from interconnection under standard procedures in order to leverage externalities
- Larger ones will try to retain existing externalities to avoid interconnection

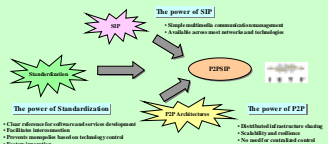
Multimedia collaborative experiences

- So far, speak in terms of different types of content
- So far, costs grow significantly with the number of participants
- P2PSIP allows to introduce fully distributed energy and bandwidth
- Otherwise, similar impact as in interpersonal communication

And the winner is... Community of interest??

- So far, mostly simple functionality: Text-based and links among participants
- Games are an good case of community using a set of uncoordinated multimedia tools
- Evolution in a category of low multimedia community platforms
- Content
- Interpersonal communication: Video, voice, IM, email, etc.
- Evolution to fully distributed community platforms
- Content
- Infrastructure
- Management
- Different degrees of inter-Community integration/federation based on standards

P2PSIP: STANDARDIZED MULTIMEDIA COMMUNICATIONS UNDER P2P ARCHITECTURE



P2PSIP: Actors and scheduling

- Proposed by IETF
- Work in progress under P2PSIP WG since 2006
- Ad hoc organization
- Key entities: Columbia, UPF, etc.
- Industry: Cisco, Huawei, Alcatel-Lucent, etc.
- Expected RFC publications: 2008/09
- Initial implementation available since www.p2psip.org

Expected impact of P2PSIP standardization

- Catalysis of integrated P2P multimedia real-time applications
- Interoperable low software and proprietary tools boosting
- Potential for a new set of collaborative Internet applications
- No need for centralized management
- No need for central repositories
- Facilitates the interconnection of applications without requiring the same software technology
- Reduction of infrastructure sharing
- Scalability and resilience
- No need for centralized control

NeTS research line

- Technical evolution of P2PSIP (participation in IETF)
- Prototyping of P2P TV platform
- Network infrastructure evolution towards P2P architectures
- Community interaction models
- Market and business models evolution analysis
- Activity landscape evolution
 - Video operation business model
 - New roles for producers and service providers
- Evaluation and implications of the regulatory framework

CONCLUSIONS AND RESEARCH LINES

- Conclusions
 - Full multimedia capabilities for every community
 - Fully distributed infrastructures, content and management
 - Standardized community interaction mechanisms
- From a service-centric to a community-centric paradigm

New scenarios

- Small communities of interest sharing multimedia tools and enjoying enriched interpersonal communication
- Interconnection of communities under standard procedures
- Network externalities internalized by the community benefits
- Paradigm change:
 - From a regulation-based around content type or video service to organization around common interests
 - From regulatory-based to P2P architecture
 - From centralized control to user control

