

*Opportunities & Challenges  
for P2P Online Social  
Networks*

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# Outline

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- Introduction of OSN
- Incentive for p2p OSN
- The challenge for p2p OSN
- Conclusion

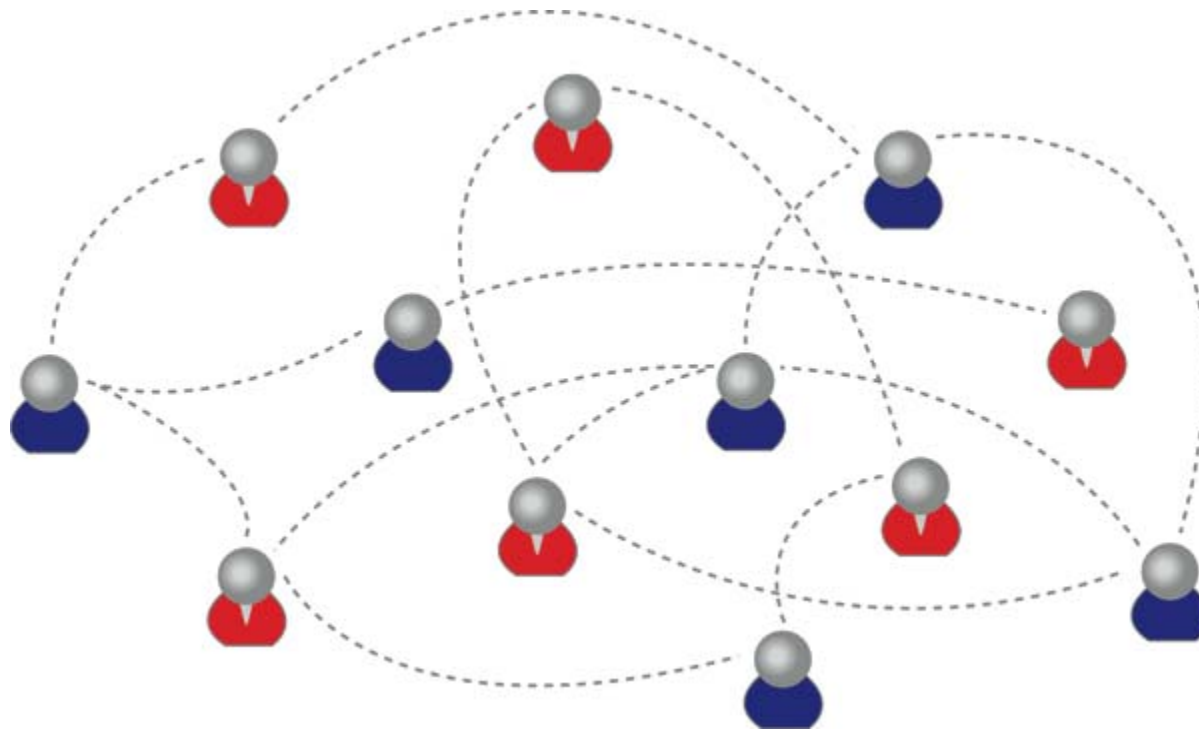
## Introduction to OSN

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- Focuses on building online communities of people who share interests and activities, or who are interested in exploring the interests and activities of others.
- Service: share information, search for friends, send message, query, ect.

# Introduction to OSN

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# Example of OSN service

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# Incentive for p2p OSN

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- Explosion of the OSN users.
  - The cost for the service providers.
    - Server devices
    - The works to maintain the system and ensure the security.
  - The personal resource of the users

# Incentive for p2p OSN

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- Privacy and protection
  - Many people are unaware about the security of their privacy information now.
  - More and more users will realize the problem and be willing to search for protection.
  - From the strangers or unfamiliar friends
  - From the service providers and third parties

## Incentive for p2p OSN

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- Advantage of the p2p OSN
  - More precise on access control.
  - Freedom from the third parties.
  - Security for the keys on encryption

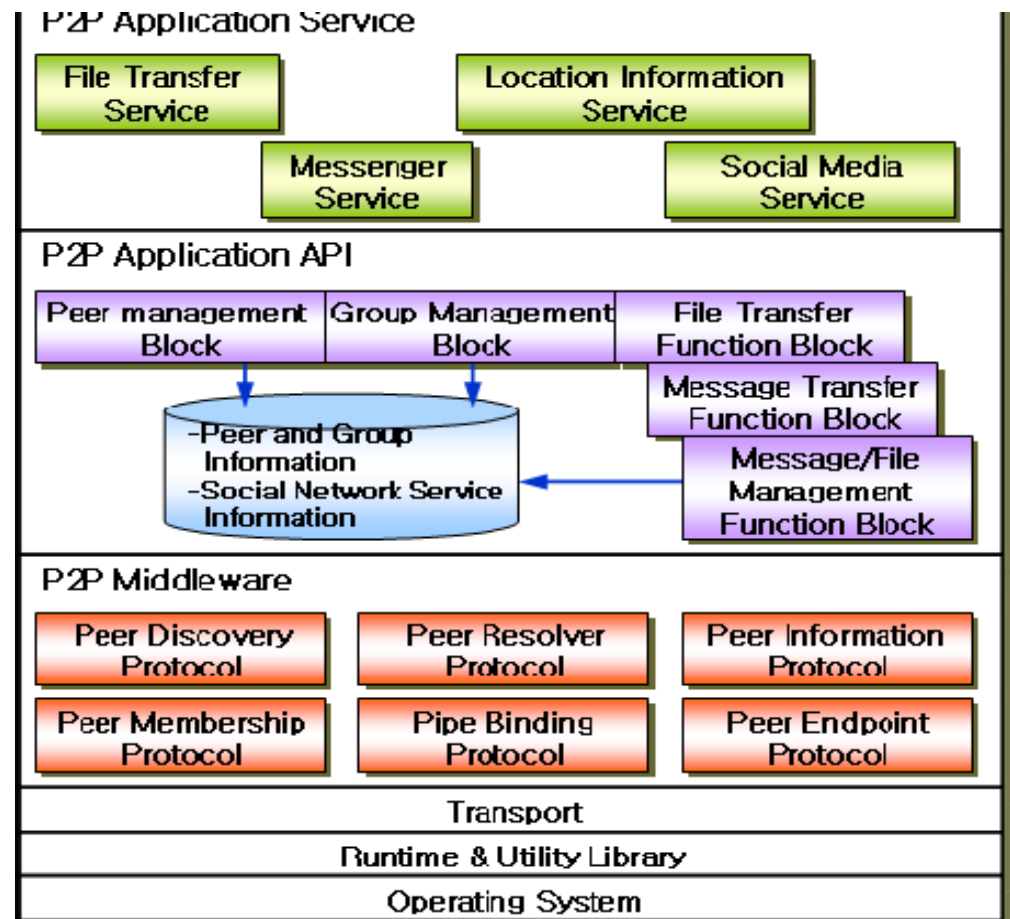


## Incentive for p2p OSN

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- The development of p2p technology
- Direct communication between users
  - Possible for users to communicate beyond the internet.

# Sample structure of a p2p OSN platform



Il-Woo Lee, Moon-Ok Choi, Ho-Jin Park, Social Networking Service based on Peer-to-Peer Network, *In The Third International Conference on Systems and Networks Communications*, 2008

## Challenge of P2P OSN

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- Some topics unsolved
- Significant aspects of the p2p OSN design
- The potential research topics

# Challenge of P2P OSN

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- Social Network features
  - without centralized third-party repository,
  - with data accessible - only to authorized members of the particular social network,
  - available even when individual members are offline,
  - on an open platform with possibility to add applications.

# Challenge of P2P OSN

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- **Storage**

- The mechanism for users to store their information.
- Several answers to this question

# Challenge of P2P OSN

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- Stored only at the owner
  - Not able to ensure the availability of the information
- Replica at friends
  - Combined with the privacy protocol
  - Reduce the possibility of data unavailable, but still not eliminate the problem
  - Obtain the data of one friend from the friend's friends
- Hybrid of server and p2p infrastructure
  - Data is stored at owners, friends and standby servers.
  - Reduce the privacy security of the data

# Challenge of P2P OSN

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- Update
  - Relate to the access control
  - The online or offline of the friends
- Search and query
- Mobility, ubiquitous access

## Conclusion

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- Online social networks based on p2p infrastructure is studied.
- The advancement of p2p OSN.
- The challenge of the p2p OSN.
- The future work is to solve the problem and to design a pragmatic systems.



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Thank you!