A P2P Toolset for Distributed Requirements Elicitation

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Problem

- Globally distributed workgroups usually rely on centralized web-based development platforms
 - Ex.: SourceCast, SourceForge
- How decentralized systems, based on a P2P architecture, can be exploited to support collaboration of ad-hoc or small software teams?
 - Dynamic collaborative groups composed of people from different organizations accessing shared resources and interacting in a near real-time manner

Characteristics of collaborative P2P systems

Autonomy

- Every peer can share information but at the same time can pose restrictions on confidential data
- Alternative to enforcing a convergence into a centrally managed data repository

Intermittency

- Any peer can disappear at any time because of network disconnections
- Users can work to shared content even when offline and automatically propagate changes at the first reconnection

Immediacy

- Presence awareness and synchronous communication
- Immediate responses by participants to enable effective personto-person interaction

Requirements elicitation

- An information gathering activity with the goal to identify system stakeholders, their needs and expectations, system objectives and boundaries
- Elicitation techniques include
 - questionnaires and surveys
 - interviews and workshops
 - documentation analysis and participant observation
- Among the most communication-rich processes of software development
 - Different stakeholders, both from the customer and the developer sides, who need to intensively communicate and collaborate

A P2P infrastructure for the toolset

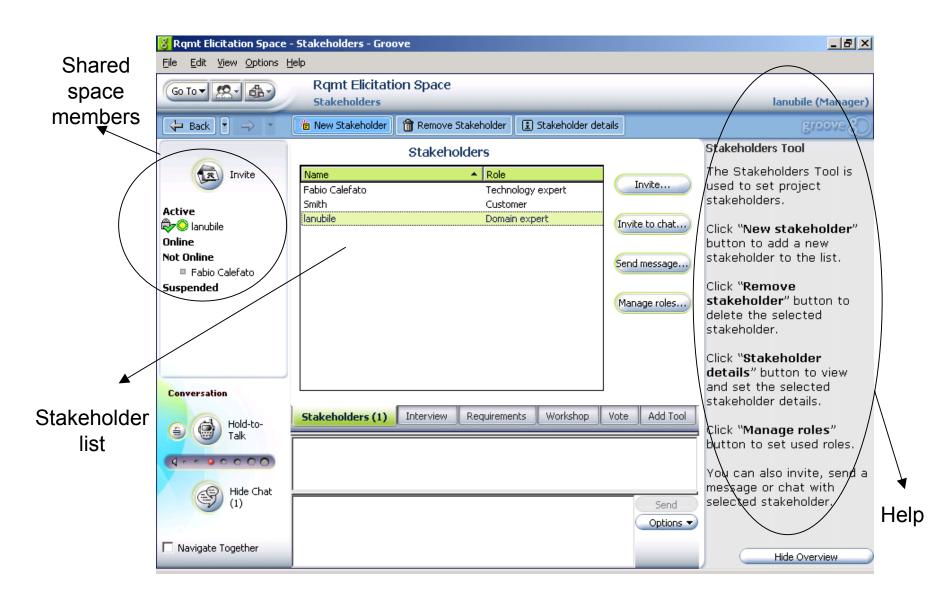
Groove

- An extensible P2P platform intended for communication, content sharing, and collaboration
- A shared space, including tools and persistent data, is duplicated on every space member's computer
 - Changes to a shared space are propagated to the other peers: both synchronous and asynchronous
- Critical services: storage, transport, encryption, synchronization, messaging, presence awareness
- Default tools: Contact Manager, Outliner, Chat, ...
- Developers can build and deploy their own tools

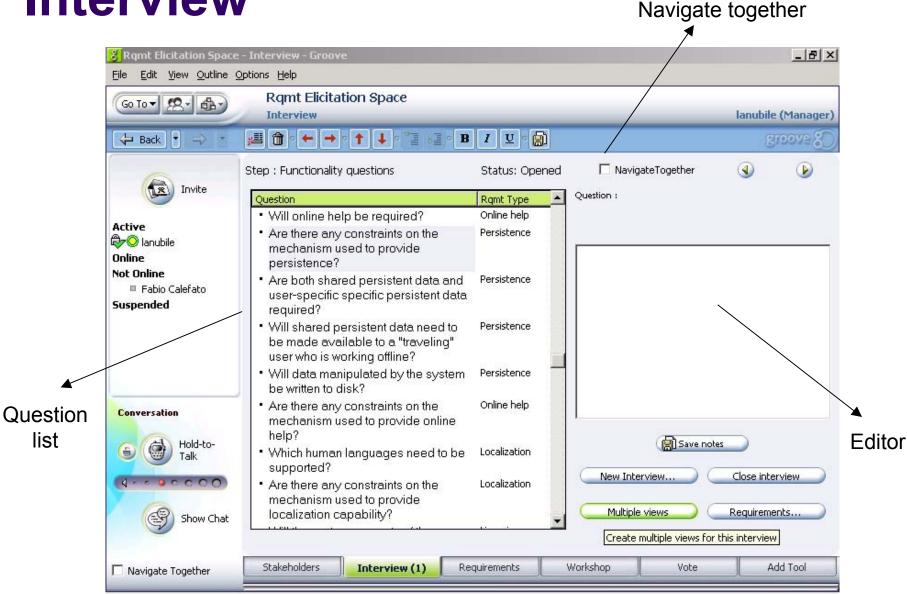
The requirements elicitation toolset

- Stakeholders
- Interview
- Requirements
- Workshop
- Vote

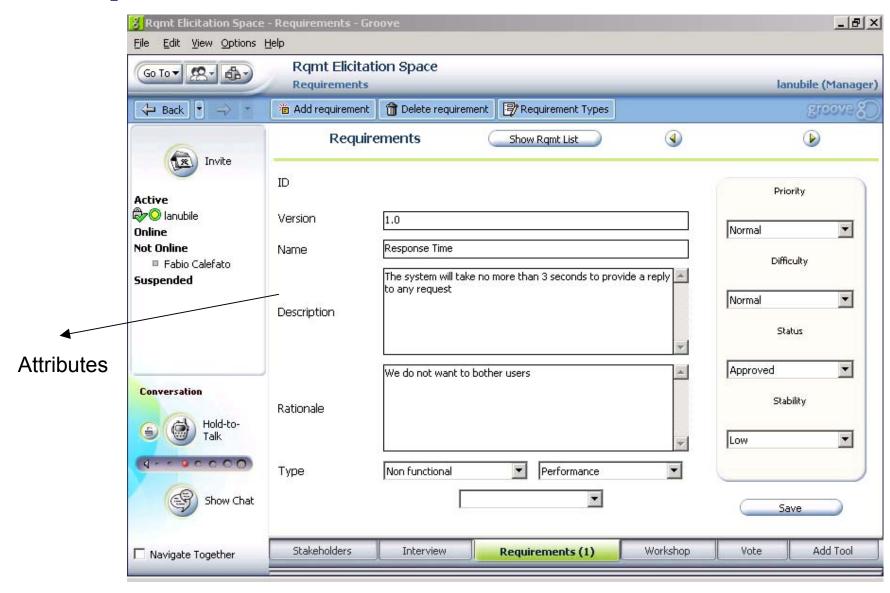
Stakeholders

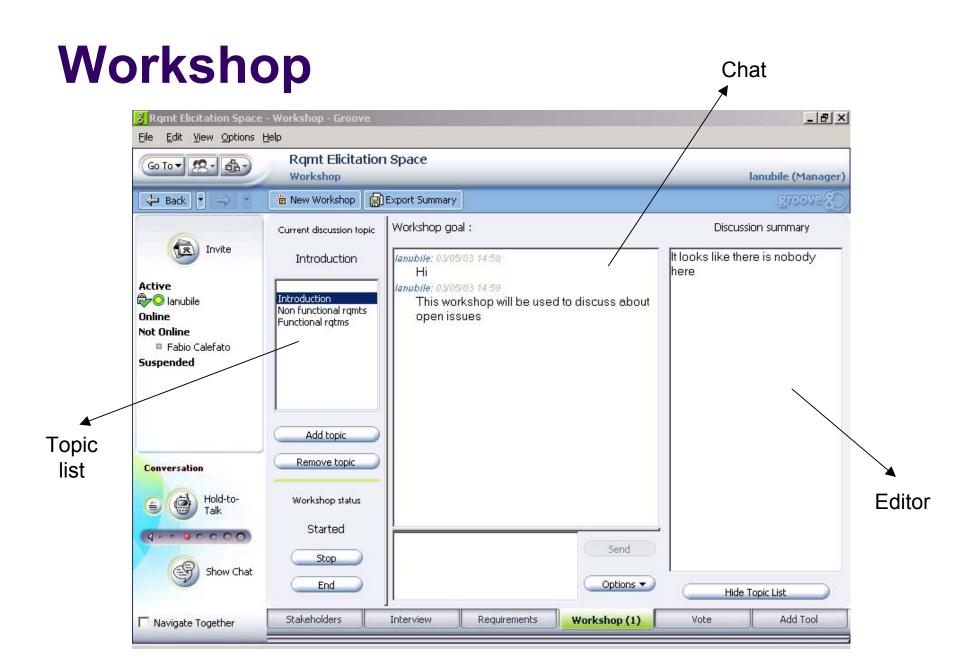


Interview

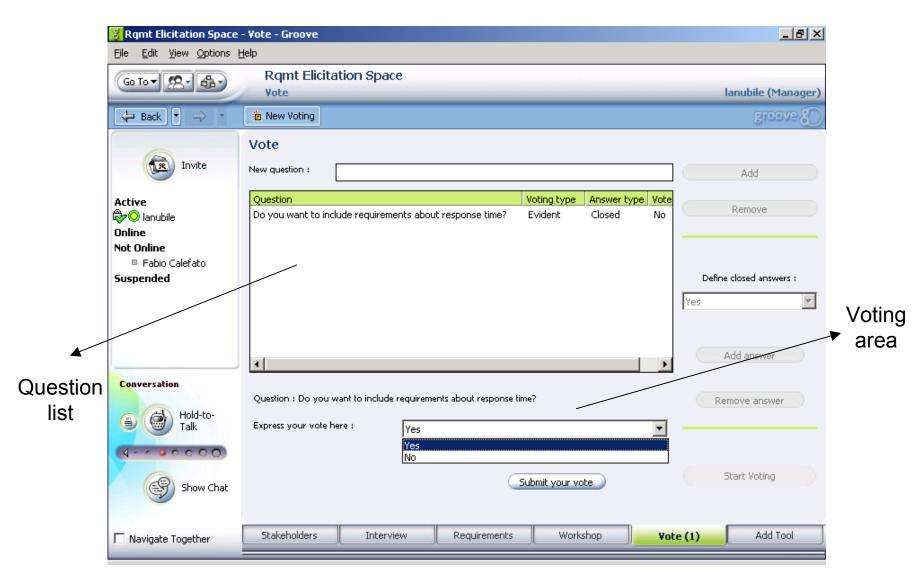


Requirements





Vote



Conclusions

- P2P applications can be seen as an alternative or a complement to centralized collaborative platforms for GSD
- Work is just at the beginning
 - Need for experimentation on the field
 - Extension to other RE phases or SE processes
 - e.g., peer reviews
 - Integration with commercial RE tools
 - e.g., RequisitePro
 - Investigation of alternative P2P infrastructure
 - e.g., JXTA