

Organizing Service-Oriented Peer Collaborations

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Abstract. Locating suitable resources within a Peer-2-Peer (P2P) system is a computationally intensive process, with no guarantee of quality and suitability of the discovered resources. An alternative approach is to categorise peers based on the services they provide – leading to the interaction of peers with common goals to form societies/communities. Organization of peers in different communities is suggested to be useful for efficient resource discovery. The concept of communities is explored with reference to questions such as: why communities are desired? How they are formed? How communities work and interact? What are different possible types of communities and their overall behaviour? What are the advantages of community formation? The communities are adaptive in nature and evolve based on changes in their operating environment – such as changes in neighbouring communities. We suggest the benefit of this approach for resource discovery, and use a JXTA prototype to illustrate the concepts. The particular focus of this paper is to explore different types of organizational structures in the context of software provision in the context of service communities.