The simulation of an ant routing algorithm and TSP approaches using Policy Nodes on Social P2P Networks

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To adapt an open unstructured decentralized P2P network into an enterprise environment, a couple of things should be highly considered.
Allowing peers doing business in enterprise social network needs us to enable monitoring procedure by utilizing a certain rules beforehand in order for peers behaves exactly through a law and enables us as a developer to provide the goodness for the entire system. This thesis will evaluate the implementation of ant routing algorithm where its compliant with novel /Ant Colony Optimization/ founded by Marco Dorigo on his PhD thesis, “Optimization, Learning and Natural Algorithms” [1] by adopting Traveling Salesman Problem (TSP) to address the applicability of an algorithm within the social network when Policy Node (PN) were installed as a mandatory. All peers will evaluate 2 type of strategies; Exploring Strategy to encourage ant to find a new path and Exploiting Strategy enables ant to determine the qualities of path regarding the link cost and a pheromone value. PN are exactly behaves like any normal peers besides they were assigned to be Head Of Cluster (HOC) when clustering process occur. Rules declared are installed inside PN and monitoring process will be executed when peer start doing a connection to each other. By that way, each route between source to the destination must at least contains 1 PN a long the path, and each peers must be assigned into one PN during joining process.

References

[1] M. Dorigo, 1992. Optimization, Learning and Natural Algorithms, PhD thesis, Politecnico di Milano, Italy.