

CHAINME: Fast Decentralized Finding Of Better Supply Chains

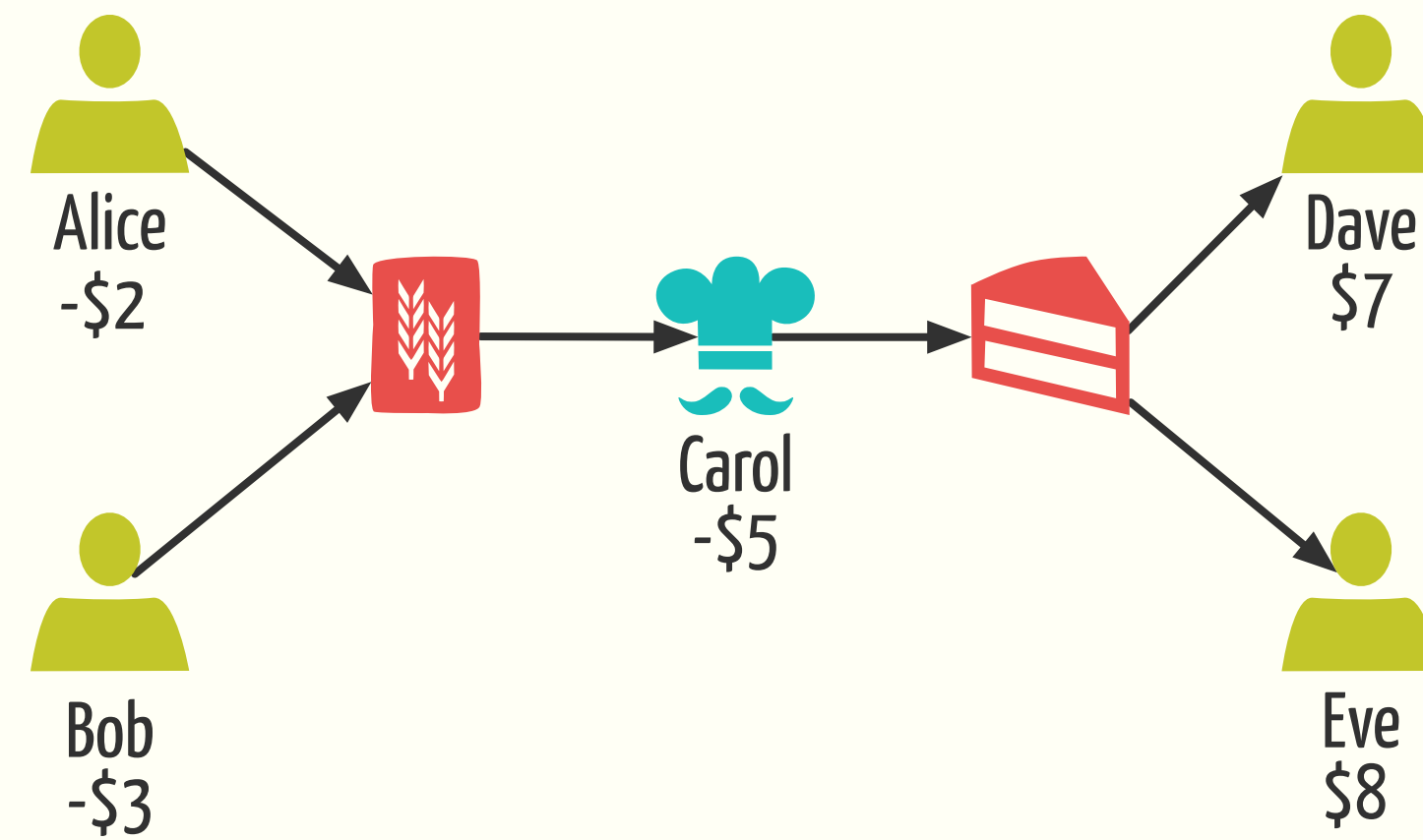
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GOAL

To provide a scalable method for Supply Chain Formation in markets with high degrees of competition while providing high valued.



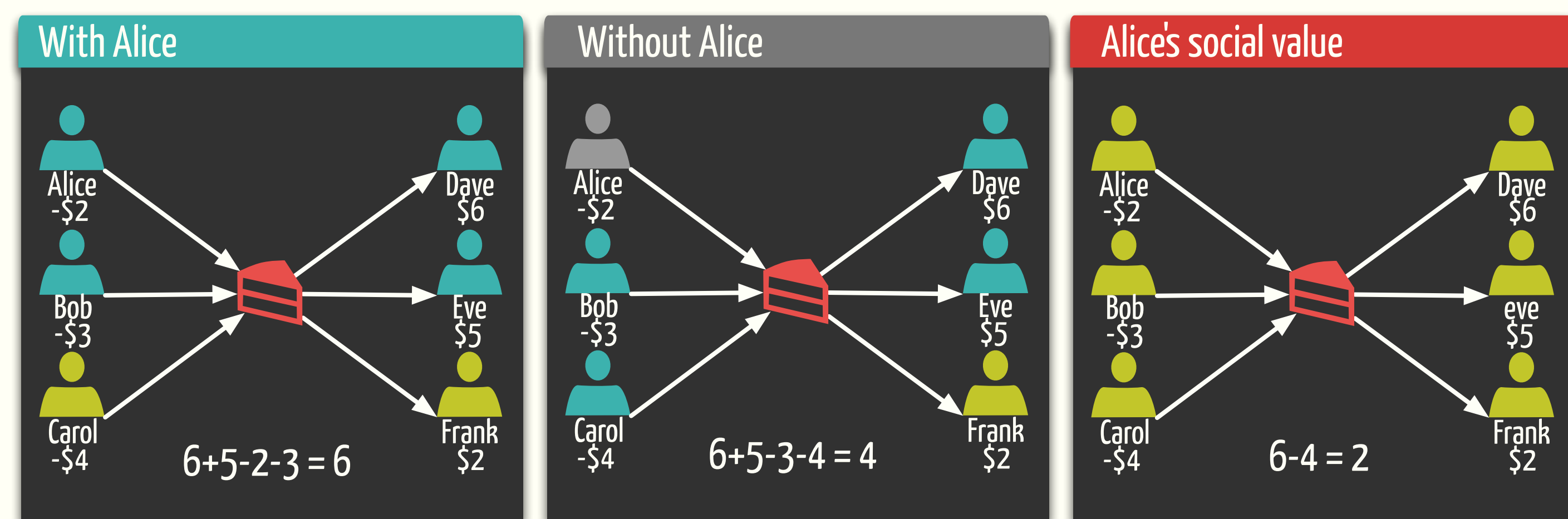
CONTRIBUTION

Produces (near) optimal solutions
Reduced computational requirements
Reduced communication requirements
The problem is modeled in terms of social value

CHAINME: Social Value propagation for Supply Chain Formation

Assess participants' social value

How much better is for the other agents that p is active over p being inactive.



Determine agent value

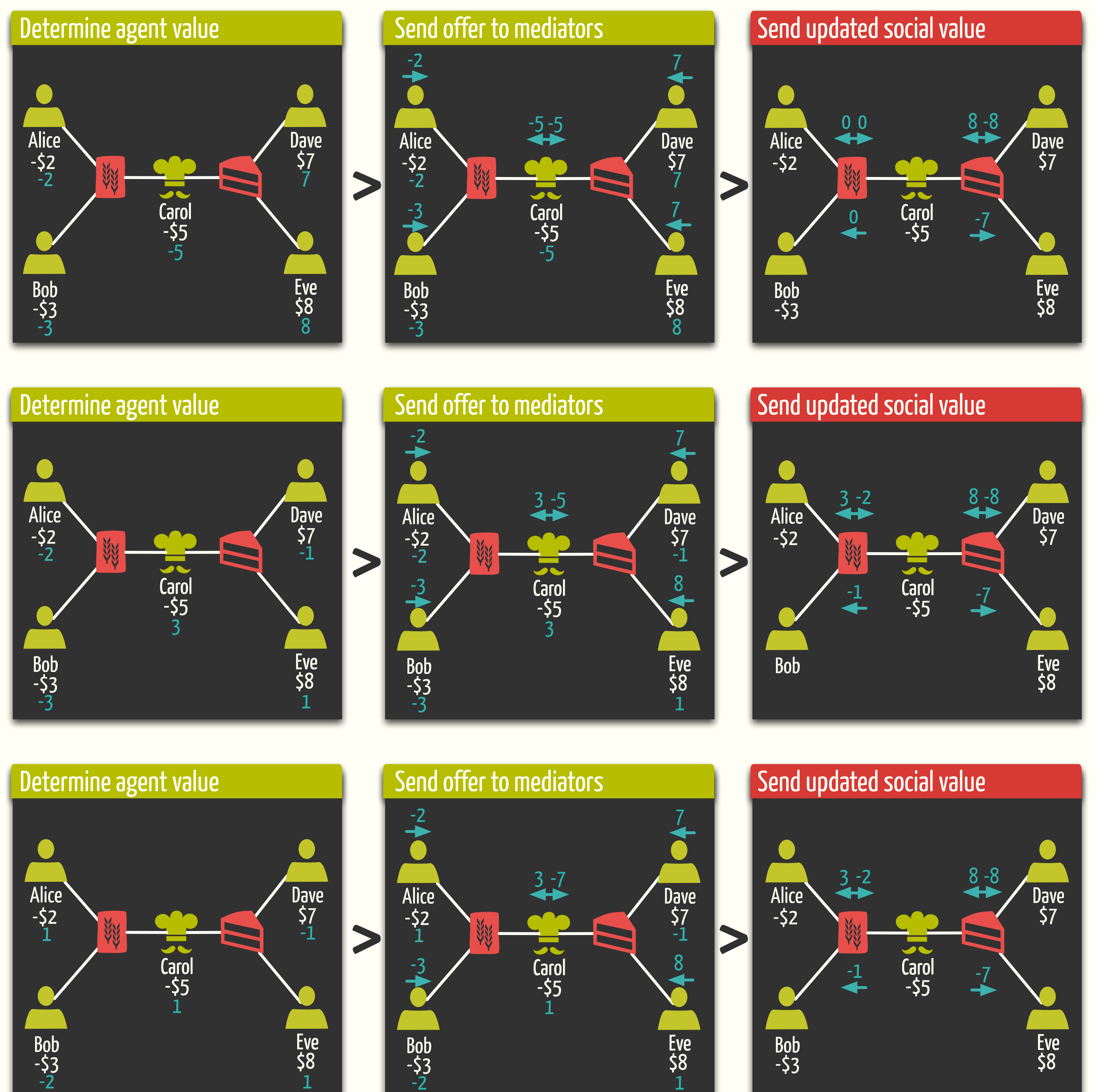
Aggregate of the social values received by the agent plus the agent's activation cost.

$$V_a = C_a + \sum_{g \in G_a} S_a^g$$

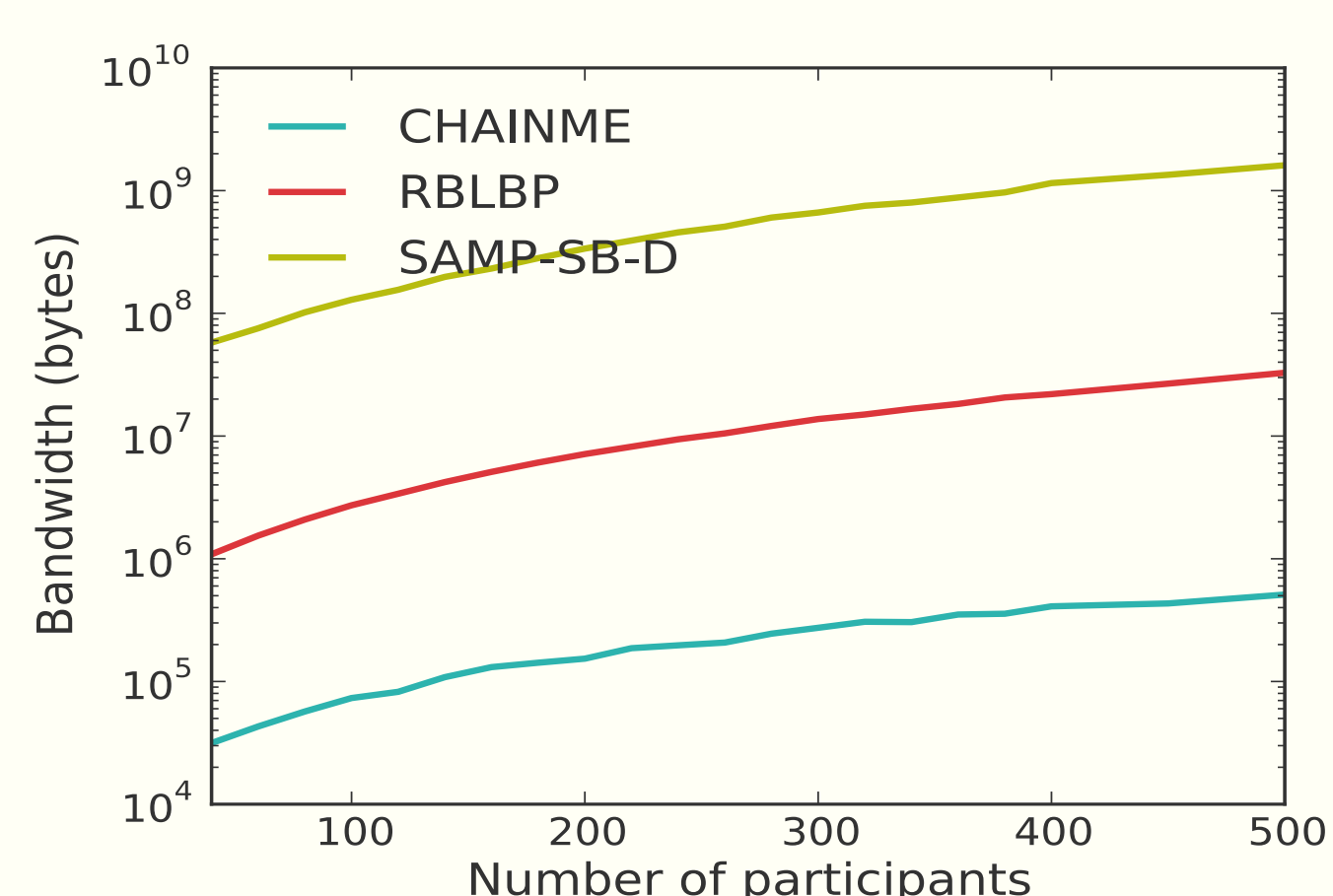
Send offer to mediators

Marginal contribution of the agent to the good mediated.

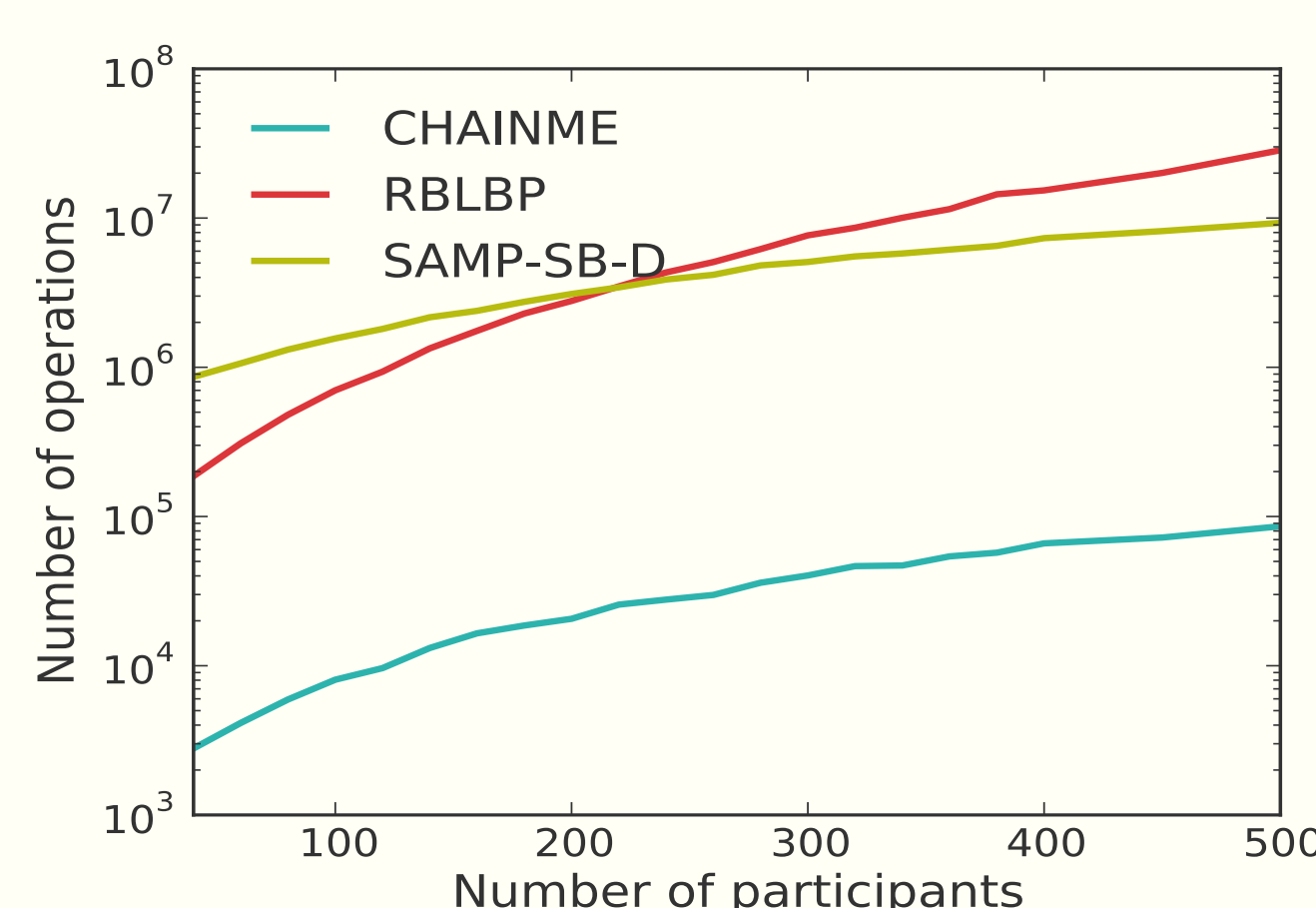
$$O_a^g \leftarrow V_a - S_a^g$$



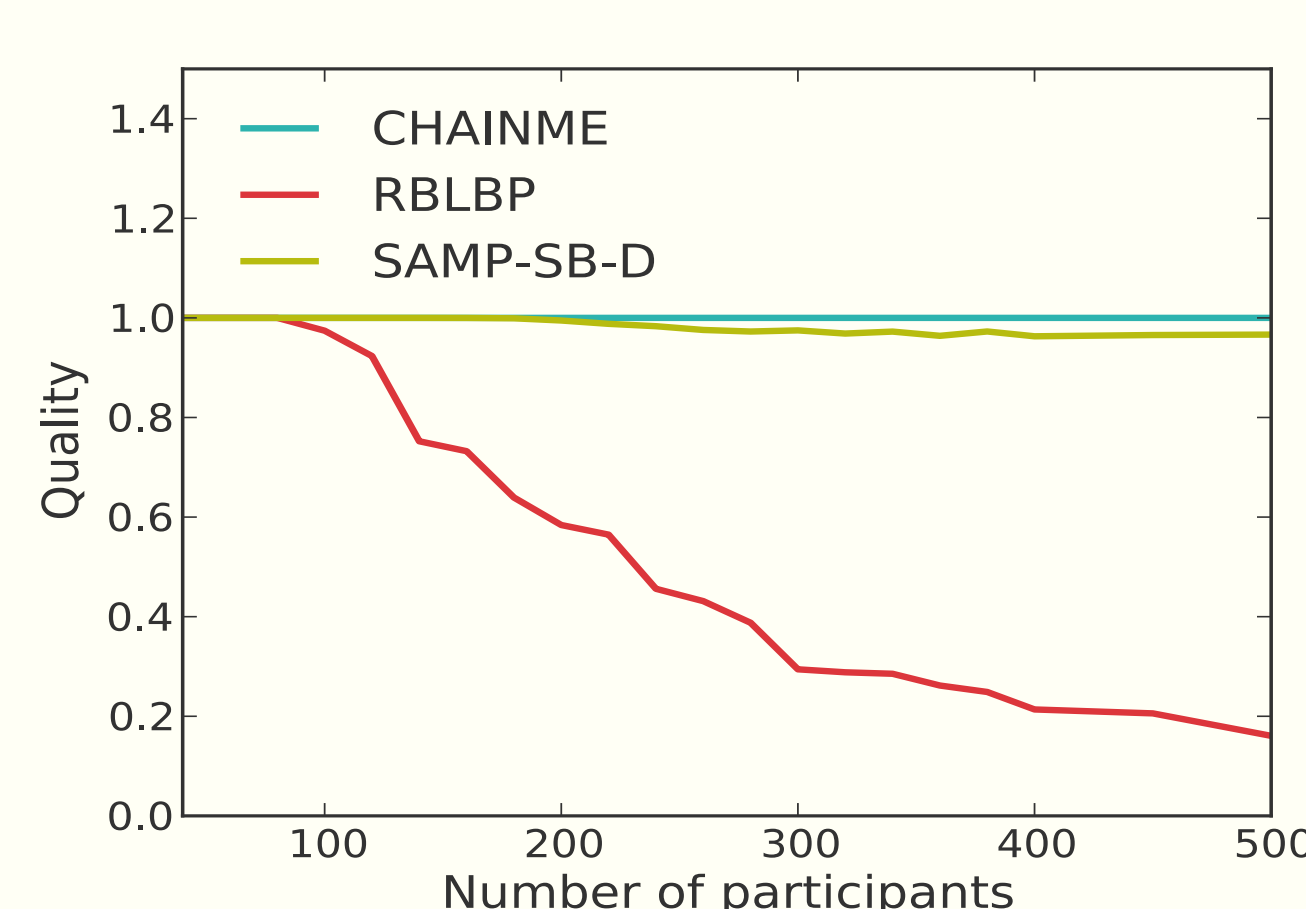
Experimental Evaluation



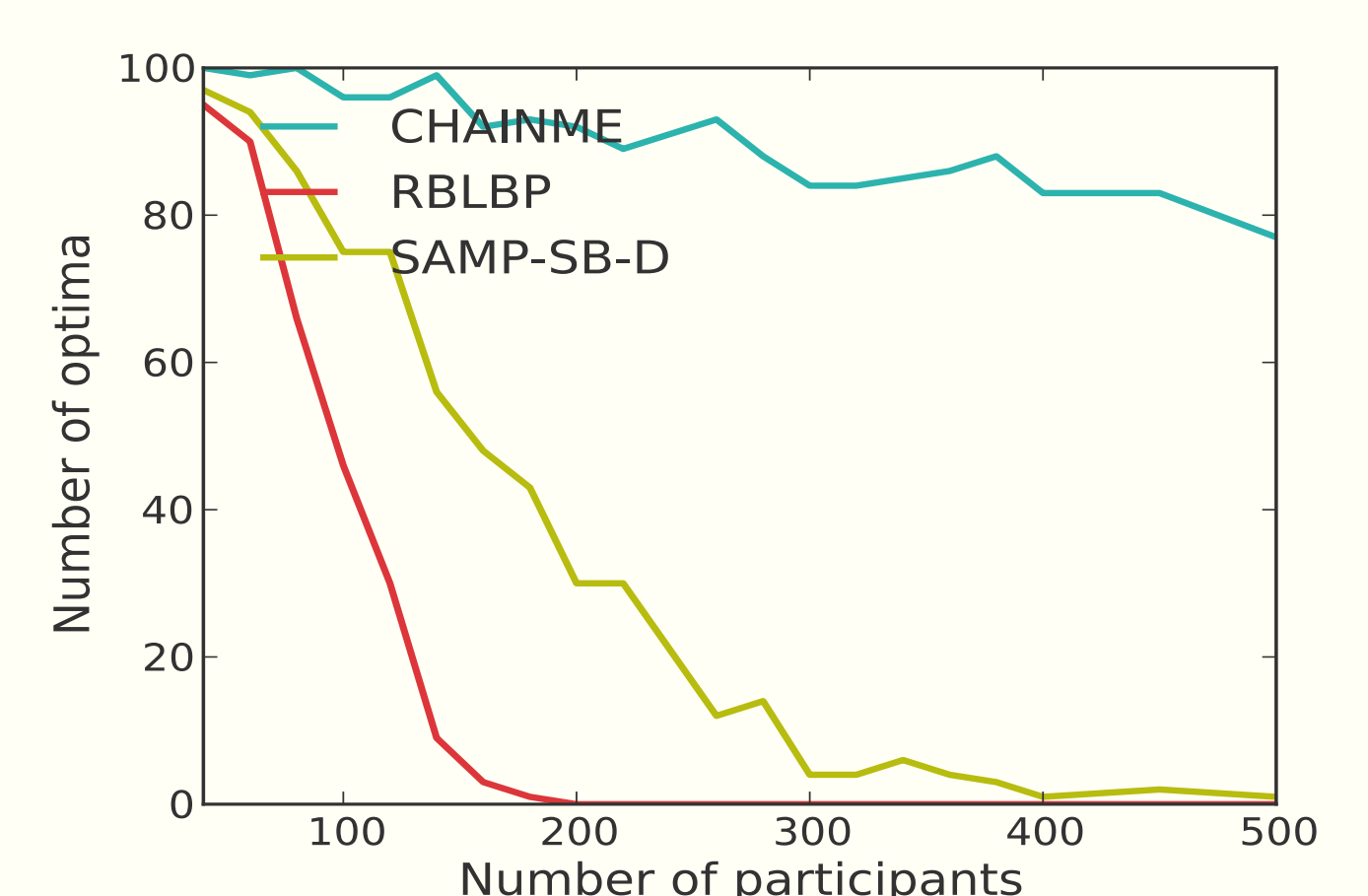
up to 50 times less bandwidth



up to 10² times faster



consistently better solutions



close to 80% optimal solutions



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Southampton