

PAIBIU: An agent submitted to the ANAC 2021 SCM League

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1 Negotiation choices

1.1 If the agent is a seller

The min value determined by the max value between the catalog price of the input product plus production cost and the trading price of the input product plus production cost. The range to negotiate is (MinValue, 2*MinValue). The agent is trying to sell the gap between the OutputNeeded to the OutputSecured.

1.2 If the agent is a buyer

The agent wants to limit the price he is ready to pay for the product. That price is the min value between the catalog price of the output product minus the production cost and the trading price of the output product minus the production cost. So we define the range to negotiate to be (MaxPrice * 0.5, MaxPrice), the reason we decided to start from the middle (and not from zero) is because we want to make a deal as soon as possible.

2 Utility function(s)

We used the linear utility function with the following weights, quantity = 0.3, time = 0, unit price = 0.7.

3 Simultaneous negotiations coordination

After the agent got all the concluded negotiations, the agent first sort the contracts for the seller and the buyers by time and units price and signed on the contracts until he have nothing to sell.

4 Risk management

When the agent is a seller he never sell more than what he already secure to be supplied. He wouldn't buy product in the last quarter.

5 Conclusion

Our agent (PAIBIU) is pretty conservative, we are not taking too much risks. We found out that this is much better than trying to sell in high price or buying on low prices because you may find yourself sign few contracts or left with unsold products. Our approach is to sell no more than the secured products. Therefore, and due to the fact this is very difficult to buy in low price, our chosen method is to buy as much products as we can in a lower price and we believe there is high probability to sell all we have bought.