AX

An agent submitted to the ANAC 2024 SCM league
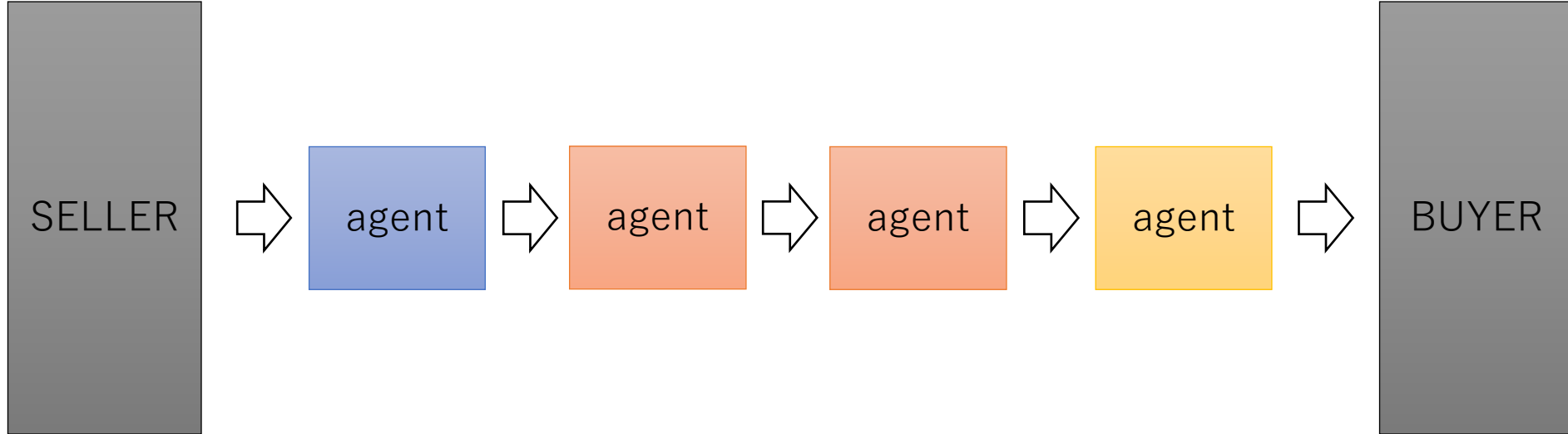
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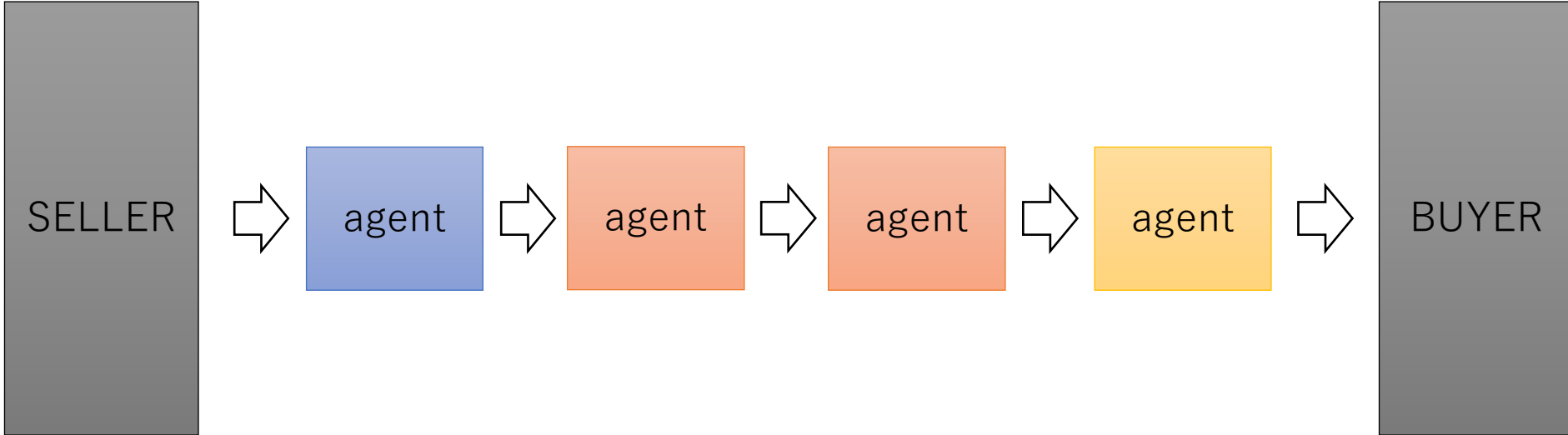
OTSUKA lab

The design of AX

- **Agents are placed at different levels.**
  - ◆ Agents placed at the first or the last level are forced to do business.
  - ◆ Agents placed at any other level are not forced to do.
    - ➢ AX needs to adopt a strategy for each of the three types of cases.

AX placed on the first level

- **AX is forced to buy products from <u>SELLER.</u>**

  - ◆ AX needs to continue to sell its products, even if the selling price is low.

    - ➢ It always reduces the risk of paying fines for not being able to produce products in time.

    - ➢ Getting other agents to buy its products is the most important thing for AX.

AX placed on last level
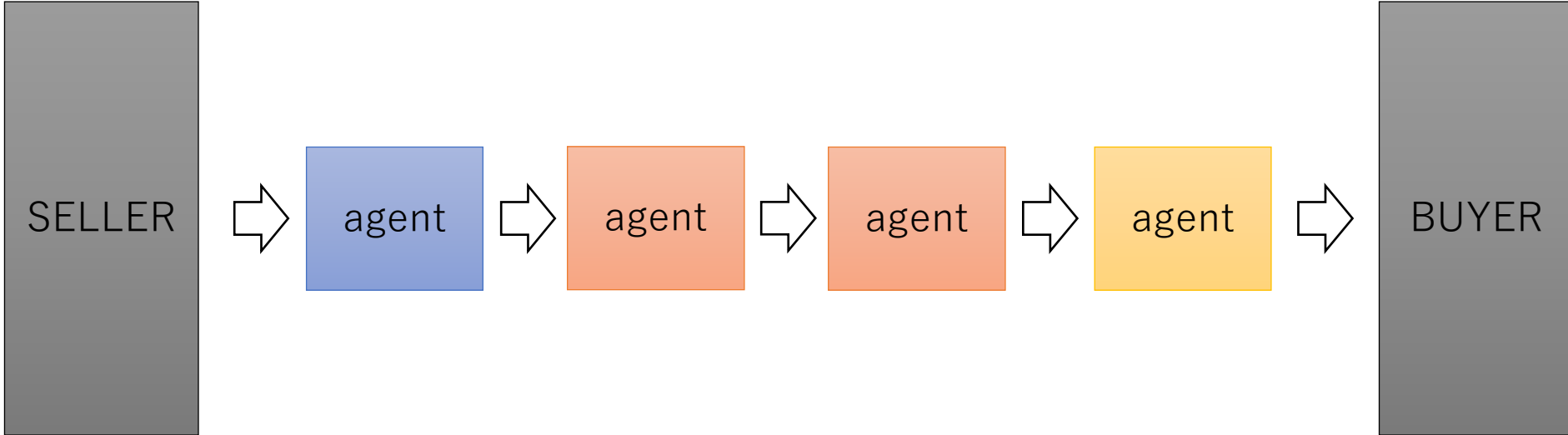
- **AX tries to buy as many products as it wants, even if the price**

  is high.
  - ◆ The number required for it is the same as the amount of products that it can produce in a day.
    - ➢ The number of products that it requests at one time in a transaction is half of the amount it needs.

AX placed on another level
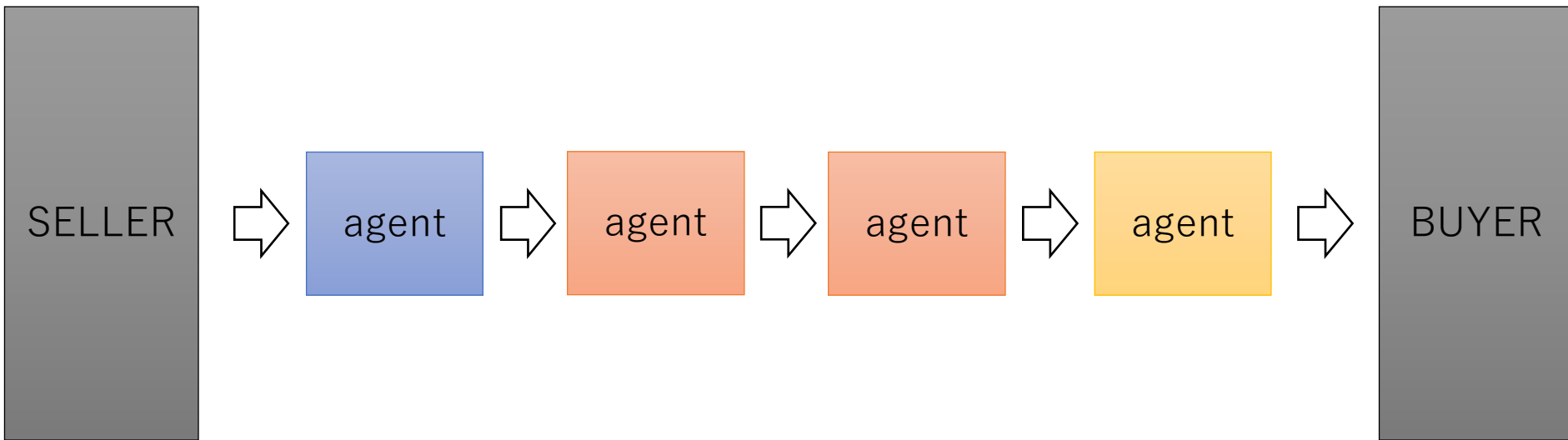
- **AX tries to buy a small amount of products cheaply and continues to sell them little by little.**
  - ◆ The price at which the product is bought and sold is flexibly determined by negotiating with the other agent.
    - ➤ This is because the biggest loss is to go into the last day without selling almost any products in the pursuit of a better contract.

Evaluation

Agent type	AX	GreedyStdAgent	SingleAgreement AspirationAgent
Score1	1.02	0.62	0.58
Score2	1.09	0.82	0.79
Score3	1.09	0.81	0.80
Score4	0.98	0.83	0.74
Score5	1.05	0.89	0.81
Average	1.05	0.79	0.74

Table 1: Agent Scores

- **AX outperformed the other two agents.**
  - But there are still challenges that have not achieved.
    - We should have found a way to get other agents to buy more products other than lowering the selling price.
    - It largely depends on whether other agents will buy its product.