TITLE: Trading Circles

BACKGROUND

[0001] An electronic trading system generally includes a trading device in communication with an electronic exchange. The electronic exchange transmits market data to the trading device. Market data includes, for example, price data, market depth data, last traded quantity data, and/or other data related to a market for a tradeable object. In some electronic trading systems, the trading device sends trade orders to the electronic exchange. A trade order may include, for example, a price, a quantity, one or more order thresholds or limits, and/or other data provided to the electronic exchange and related to transactions involving one or more of the tradeable objects. Upon receiving a trade order, the electronic exchange may enter the trade order into an exchange order book and attempt to match quantity of the trade order with quantity of one or more contra-side trade orders.

SUMMARY OF INVENTION

[0001a] According to a first aspect of the present invention, there is provided ~~a computer implemented method comprising: defining, at a computing device, a group having a plurality of members, wherein one or more of the plurality of members interacts with an exchange that facilitates market transactions; detecting, by the computing device, a first interaction of a first group member with the exchange; and communicating, from the computing device and in response to detecting the first interaction, data related to the first interaction to another computing device associated with a second group member before the computing device associated with the first group member receives confirmation of the first interaction from the exchange.~~ a method including:

receiving by a computing device a definition for a trading group, wherein the trading group includes a first application and a second application, wherein the first application and the second application are trading applications executing on the computing device, wherein the first application is working a first trading strategy including a first tradeable object and a second tradeable object, wherein the second application is working a second trading strategy including the second tradeable object and a third tradeable object, wherein the first trading strategy is quoting the first tradeable object and leaning on the second tradeable object, wherein the second trading strategy is quoting the third tradeable object and leaning on the second tradeable object;

detecting by the computing device that a hedge order has been sent from the first application for the second tradeable object of the first trading strategy to an electronic exchange;

communicating by the computing device, in response to detecting that the hedge order has been sent, before a market effect of the hedge order is received from the electronic exchange, data related to the hedge order to the second trading application;

determining by the computing device, before the market effect of the hedge order is received from the electronic exchange, a new lean price for the second trading strategy based on a result that the hedge order will have in the quantity leaned on by the second trading strategy; and

sending by the computing device, before the market effect of the hedge order is received from the electronic exchange, a command to change a quoting order for the third tradeable object of the second trading strategy based on the new lean price.

[0001b] According to a second aspect of the present invention, there is provided ~~a tangible computer readable storage medium including instructions that, when executed, cause a computing device to at least: define a group having a plurality of members, wherein one or more of the plurality of members interacts with an exchange that facilitates market transactions; detect a first interaction of a first group member with the exchange; and communicate, in response to detecting the first interaction, data related to the first interaction to a second group member before the first group member receives confirmation of the first interaction from the exchange.~~a computer readable medium storing instructions that, when executed, cause a computing device at least to perform operations including:

receiving by a computing device a definition for a trading group, wherein the trading group includes a first application and a second application, wherein the first application and the second application are trading applications executing on the computing device, wherein the first application is working a first trading strategy including a first tradeable object and a second tradeable object, wherein the second application is working a second trading strategy including the second tradeable object and a third tradeable object, wherein the first trading strategy is quoting the first tradeable object and leaning on the second tradeable object, wherein the second trading strategy is quoting the third tradeable object and leaning on the second tradeable object;

detecting by the computing device that a hedge order has been sent from the first application for the second tradeable object of the first trading strategy to an electronic exchange;

communicating by the computing device, in response to detecting that the hedge order has been sent, before a market effect of the hedge order is received from the electronic exchange, data related to the hedge order to the second trading application;

determining by the computing device, before the market effect of the hedge order is received from the electronic exchange, a new lean price for the second trading strategy based on a result that the hedge order will have in the quantity leaned on by the second trading strategy; and

sending by the computing device, before the market effect of the hedge order is received from the electronic exchange, a command to change a quoting order for the third tradeable object of the second trading strategy based on the new lean price.

[0001c] According to a third aspect of the present invention, there is provided ~~an apparatus including: a definer to define a group having a plurality of members, wherein one or more of the plurality of members interacts with an exchange that facilitates market transactions; a detector to detect a first interaction of a first group member with the exchange; and a communicator to, in response to the detector detecting the first interaction, communicate data related to the first interaction to a second group member before the first group member receives confirmation of the first interaction from the exchange.~~ a system including:

a processor; and

a memory storing instructions that, when executed, cause the system to perform at least operations including:

receiving by a computing device a definition for a trading group, wherein the trading group includes a first application and a second application, wherein the first application and the second application are trading applications executing on the computing device, wherein the first application is working a first trading strategy including a first tradeable object and a second tradeable object, wherein the second application is working a second trading strategy including the second tradeable object and a third tradeable object, wherein the first trading strategy is quoting the first tradeable object and leaning on the second tradeable object, wherein the second trading strategy is quoting the third tradeable object and leaning on the second tradeable object;

detecting by the computing device that a hedge order has been sent from the first application for the second tradeable object of the first trading strategy to an electronic exchange;

communicating by the computing device, in response to detecting that the hedge order has been sent, before a market effect of the hedge order is received from the electronic exchange, data related to the hedge order to the second trading application;

determining by the computing device, before the market effect of the hedge order is received from the electronic exchange, a new lean price for the second trading strategy based on a result that the hedge order will have in the quantity leaned on by the second trading strategy; and

sending by the computing device, before the market effect of the hedge order is received from the electronic exchange, a command to change a quoting order for the third tradeable object of the second trading strategy based on the new lean price.

BRIEF DESCRIPTION OF THE DRAWINGS

[0002] Certain embodiments are disclosed with reference to the following drawings.

[0003] FIG. 1 illustrates a block diagram of an example electronic trading system in which embodiments disclosed herein may be employed.

[0004] FIG. 2 illustrates a block diagram of an example computing device that may be used to implement the disclosed embodiments.

[0005] FIG. 3 illustrates a block diagram of an example apparatus that may be used to implement an example trading circle manager.

[0006] FIGS. 4A to 4C illustrate a plurality of example trading circle configurations defined in the example trading circle manager of FIG. 3.

[0007] FIG. 5 illustrates a screenshot associated with the example price data expander of FIG. 3.

[0008] FIG. 6 is a first flow diagram illustrative of machine readable instructions that may be executed to implement the example circle definer of FIG. 3.

[0009] FIG. 7 is a second flow diagram illustrative of machine readable instructions that may be executed to implement the example trading circle manager of FIG. 3.

CLAIMS

What is claimed is:

1. A computer implemented method comprising:

defining, at a computing device, a group having a plurality of members, wherein one or more of the plurality of members interacts with an exchange that facilitates market transactions;

detecting, by the computing device, a first interaction of a first group member with the exchange; and

communicating, from the computing device and in response to detecting the first interaction, data related to the first interaction to another computing device associated with a second group member before the computing device associated with the first group member receives confirmation of the first interaction from the exchange.

2. The method of claim 1, further comprising calculating, at the computing device, an effect of the first interaction on the exchange before the first group member receives the confirmation of the first interaction from the exchange.

3. The method of claim 2, further comprising communicating data related to the calculated effect to the another computing device associated with the second group member.

4. The method of claim 3, wherein communicating the data related to the calculated effect to the second group member comprises sending the data related to the calculated effect to the second group member without waiting for the exchange to process the first interaction.

5. The method of claim 1, further comprising:

determining, at the computing device, which of the plurality of members of the group are interested in the first interaction; and

filtering, at the computing device, the communication of the data related to the first interaction to exclude members of the group not interested in the first interaction.

6. The method of claim 1, further comprising:

determining, at the computing device and before the first group member receives confirmation of the first interaction from the exchange, whether the first interaction will cause a first working order of a third group member to be filled; and

communicating data related to the determination to the third group member.

7. The method of claim 1, further comprising:

determining, at the computing device before the first group member receives confirmation of the first interaction from the exchange, a likelihood that the first interaction will result in a first working order of a third group member being filled; and

communicating the likelihood to the third group member.

8. A tangible computer readable storage medium including instructions that, when executed, cause a computing device to at least:

define a group having a plurality of members, wherein one or more of the plurality of members interacts with an exchange that facilitates market transactions;

detect a first interaction of a first group member with the exchange; and

communicate, in response to detecting the first interaction, data related to the first interaction to a second group member before the first group member receives confirmation of the first interaction from the exchange.

9. The computer readable storage medium as defined in claim 8, the instructions to, when executed, cause the machine to calculate an effect of the first interaction on the exchange before the first group member receives the confirmation of the first interaction from the exchange.

10. The computer readable storage medium as defined in claim 9, the instructions to, when executed, cause the machine to communicate data related to the calculated effect to the second group member.

11. The computer readable storage medium as defined in claim 10, wherein communicating the data related to the calculated effect to the second group member comprises sending the data related to the calculated effect to the second group member without waiting for the exchange to process the first interaction.

12. The computer readable storage medium as defined in claim 8, the instructions to, when executed, cause the machine to:

determine which of the plurality of members of the group are interested in the first interaction: and

filter the communication of the data related to the first interaction to exclude members of the group not interested in the first interaction.

13. The computer readable storage medium as defined in claim 8, the instructions to, when executed, cause the machine to:

determine, before the first group member receives confirmation of the first interaction from the exchange, whether the first interaction will cause a first working order of a third group member to be filled; and

communicate data related to the determination to the third group member.

14. The computer readable storage medium as defined in claim 8, the instructions to, when executed, cause the machine to:

determine, before the first group member receives confirmation of the first interaction from the exchange, a likelihood that the first interaction will result in a first working order of a third group member being filled: and

communicate the likelihood to the third group member.

15. An apparatus including:

a definer to define a group having a plurality of members, wherein one or more of the plurality of members interacts with an exchange that facilitates market transactions;

a detector to detect a first interaction of a first group member with the exchange; and

a communicator to, in response to the detector detecting the first interaction, communicate data related to the first interaction to a second group member before the first group member receives confirmation of the first interaction from the exchange.

16. The apparatus of claim 15, further comprising an analysis module to calculate an effect of the first interaction on the exchange before the first group member receives the confirmation of the first interaction from the exchange.

17. The apparatus of claim 16, wherein the communicator is to communicate data related to the calculated effect to the second group member.

18. The apparatus of claim 17, wherein communicating the data related to the calculated effect to the second group member comprises sending the data related to the calculated effect to the second group member without waiting for the exchange to process the first interaction.

19. The apparatus of claim 15, further comprising a filter to:

determine which of the plurality of members of the group are interested in the first interaction; and

filter the communication of the data related to the first interaction to exclude members of the group not interested in the first interaction.

20. The apparatus of claim 15, further comprising a fill detector to determine, before the first group member receives confirmation of the first interaction from the exchange, whether the first interaction will cause a first working order of a third group member to be filled, wherein the data related to the determination is to be communicated to the third group member.

21. The apparatus of claim 15, further comprising a fill detector to determine, before the first group member receives confirmation of the first interaction from the exchange, a likelihood that the first interaction will result in a first working order of a third group member being filled, wherein the likelihood is to be communicated to the third group member.

CLAIMS

1. A method including:

receiving by a computing device a definition for a trading group, wherein the trading group includes a first application and a second application, wherein the first application and the second application are trading applications executing on the computing device, wherein the first application is working a first trading strategy including a first tradeable object and a second tradeable object, wherein the second application is working a second trading strategy including the second tradeable object and a third tradeable object, wherein the first trading strategy is quoting the first tradeable object and leaning on the second tradeable object, wherein the second trading strategy is quoting the third tradeable object and leaning on the second tradeable object;

detecting by the computing device that a hedge order has been sent from the first application for the second tradeable object of the first trading strategy to an electronic exchange;

communicating by the computing device, in response to detecting that the hedge order has been sent, before a market effect of the hedge order is received from the electronic exchange, data related to the hedge order to the second trading application;

determining by the computing device, before the market effect of the hedge order is received from the electronic exchange, a new lean price for the second trading strategy based on a result that the hedge order will have in the quantity leaned on by the second trading strategy; and

sending by the computing device, before the market effect of the hedge order is received from the electronic exchange, a command to change a quoting order for the third tradeable object of the second trading strategy based on the new lean price.

2. The method of claim 1, wherein the first trading application is the same as the second trading application.

3. The method of claim 1, wherein the first trading application is different from the second trading application.

4. The method of claim 1, wherein the first trading strategy is the same as the second trading strategy.

5. The method of claim 1, wherein the first trading strategy is different from the second trading strategy.

6. The method of claim 1, wherein the first tradeable object is the same as the third tradeable object.

7. The method of claim 1, wherein the first tradeable object is different from the third tradeable object.

8. The method of any one of claims 1-7, wherein the hedge order is sent in response to the first application receiving a fill notification for the quoting order of the first tradeable object.

9. The method of any one of claims 1-8, further including:
determining by the computing device the result that the hedge order will have in the quantity leaned on by the second trading strategy.

10. The method of any one of claims 1-9, wherein communicating the data related to the hedge order to the second trading application is further in response to the determined result.

11. The method of any one of claims 1-10, wherein the trading group further includes a plurality of other members.

12. The method of any one of claims 1-11, further including:
communicating by the computing device the data related to the hedge order to another member of the trading group.

13. The method of any one of claims 1-12, further including:

determining by the computing device that one or more other members of the trading group are interested in the result the hedge order will have in the quantity of the second tradeable object; and

communicating by the computing device the data related to the hedge order to the one or more other members of the trading group.

14. A computer readable medium storing instructions that, when executed, cause a computing device at least to perform operations including:

receiving by a computing device a definition for a trading group, wherein the trading group includes a first application and a second application, wherein the first application and the second application are trading applications executing on the computing device, wherein the first application is working a first trading strategy including a first tradeable object and a second tradeable object, wherein the second application is working a second trading strategy including the second tradeable object and a third tradeable object, wherein the first trading strategy is quoting the first tradeable object and leaning on the second tradeable object, wherein the second trading strategy is quoting the third tradeable object and leaning on the second tradeable object;

detecting by the computing device that a hedge order has been sent from the first application for the second tradeable object of the first trading strategy to an electronic exchange;

communicating by the computing device, in response to detecting that the hedge order has been sent, before a market effect of the hedge order is received from the electronic exchange, data related to the hedge order to the second trading application;

determining by the computing device, before the market effect of the hedge order is received from the electronic exchange, a new lean price for the second trading strategy based on a result that the hedge order will have in the quantity leaned on by the second trading strategy; and

sending by the computing device, before the market effect of the hedge order is received from the electronic exchange, a command to change a quoting order for the third tradeable object of the second trading strategy based on the new lean price.

15. The computer readable medium of claim 14, wherein the first trading application is the same as the second trading application.

16. The computer readable medium of claim 14, wherein the first trading application is different from the second trading application.

17. The computer readable medium of claim 14, wherein the first trading strategy is the same as the second trading strategy.

18. The computer readable medium of claim 14, wherein the first trading strategy is different from the second trading strategy.

19. The computer readable medium of claim 14, wherein the first tradeable object is the same as the third tradeable object.

20. The computer readable medium of claim 14, wherein the first tradeable object is different from the third tradeable object.

21. The computer readable medium of any one of claims 14-20, wherein the hedge order is sent in response to the first application receiving a fill notification for the quoting order of the first tradeable object.

22. The computer readable medium of any one of claims 14-21, wherein the instructions further cause the computing device to determine by the computing device the result that the hedge order will have in the quantity leaned on by the second trading strategy.

23. The computer readable medium of any one of claims 14-22, wherein communicating the data related to the hedge order to the second trading application is further in response to the determined result.

24. The computer readable medium of any one of claims 14-23, wherein the trading group further includes a plurality of other members.

25. The computer readable medium of any one of claims 14-24, wherein the instructions further cause the computing device to communicate by the computing device the data related to the hedge order to another member of the trading group.

26. The computer readable medium of any one of claims 14-25, wherein the instructions further cause the computing device to:

determine by the computing device that one or more other members of the trading group are interested in the result the hedge order will have in the quantity of the second tradeable object; and

communicate by the computing device the data related to the hedge order to the one or more other members of the trading group.

27. A system including:

a processor; and

a memory storing instructions that, when executed, cause the system to perform at least operations including:

receiving by a computing device a definition for a trading group, wherein the trading group includes a first application and a second application, wherein the first application and the second application are trading applications executing on the computing device, wherein the first application is working a first trading strategy including a first tradeable object and a second tradeable object, wherein the second application is working a second trading strategy including the second tradeable object and a third tradeable object, wherein the first trading strategy is quoting the first tradeable object and leaning on the second tradeable object, wherein the second trading strategy is quoting the third tradeable object and leaning on the second tradeable object;

detecting by the computing device that a hedge order has been sent from the first application for the second tradeable object of the first trading strategy to an electronic exchange;

communicating by the computing device, in response to detecting that the hedge order has been sent, before a market effect of the hedge order is received from the electronic exchange, data related to the hedge order to the second trading application;

determining by the computing device, before the market effect of the hedge order is received from the electronic exchange, a new lean price for the second trading strategy based on a result that the hedge order will have in the quantity leaned on by the second trading strategy; and

sending by the computing device, before the market effect of the hedge order is received from the electronic exchange, a command to change a quoting order for the third tradeable object of the second trading strategy based on the new lean price.

28. The system of claim 27, wherein the first trading application is the same as the second trading application.

29. The system of claim 27, wherein the first trading application is different from the second trading application.

30. The system of claim 27, wherein the first trading strategy is the same as the second trading strategy.

31. The system of claim 27, wherein the first trading strategy is different from the second trading strategy.

32. The system of claim 27, wherein the first tradeable object is the same as the third tradeable object.

33. The system of claim 27, wherein the first tradeable object is different from the third tradeable object.

34. The system of any one of claims 27-33, wherein the hedge order is sent in response to the first application receiving a fill notification for the quoting order of the first tradeable object.

35. The system of any one of claims 27-34, wherein the instructions further cause the system to determine by the computing device the result that the hedge order will have in the quantity leaned on by the second trading strategy.

36. The system of any one of claims 27-35, wherein communicating the data related to the hedge order to the second trading application is further in response to the determined result.

37. The system of any one of claims 27-36, wherein the trading group further includes a plurality of other members.

38. The system of any one of claims 27-37, wherein the instructions further cause the system to communicate by the computing device the data related to the hedge order to another member of the trading group.

39. The system of any one of claims 27-38, wherein the instructions further cause the system to:

determine by the computing device that one or more other members of the trading group are interested in the result the hedge order will have in the quantity of the second tradeable object; and

communicate by the computing device the data related to the hedge order to the one or more other members of the trading group.