Claims

1. A computer-implemented method performed by a server of a peer-to-peer (P2P) network, for use in smoothing traffic on the P2P network, the method comprising:

accessing, by a server of a P2P network, a database including historical data describing traffic on the P2P network, the traffic including previous payments;

segmenting a future time period into a plurality of future time-slots and, based on the historical data, determining, by the server, for each of the plurality of future time-slots, an estimate of future traffic on the P2P network, the future traffic including a number of future payments the server will have to perform in the future time-slot;

based on said estimates, assigning, by the server, to at least one of the plurality of future time-slots, an incentive;

receiving, by the server, from a communication device associated with a payment sender, a request to make a payment from a first payment account maintained by an issuer and associated with the payment sender, to a payment recipient, said payment recipient associated with a second payment account maintained by an acquirer;

in response to the request, presenting, by the server, to the communication device associated with the payment sender, the at least one future time-slot to which the incentive was assigned;

receiving, by the server, from the communication device associated with the payment sender, a selection of a future time-slot from the at least one presented future time-slot;

in response to the selection, entering, by the server, the payment to the second payment account into the selected future time-slot in a scheduling database, the scheduling database including scheduling data for a plurality of different payments;

based on the scheduling data, determining, by the server, whether a present time-slot is the future time-slot into which the payment to the second account is scheduled; and

when the present time-slot is the future time-slot into which the payment to the second account is scheduled, communicating, by the server, with at least one of the issuer and acquirer, to cause the payment to the second payment account within the selected time-slot, whereby the server is enabled to smooth traffic on the P2P network over time, thereby reducing computation resource requirements of the server at peak times.

2. The computer implemented method according to claim 1, further comprising:

upon receiving said request, transmitting to the communication device associated with the payment sender a query of whether the payment to the second account is urgent, and receiving from the payment sender a response to the query; and

when the response to the query is negative, presenting, by the server, to the communication device associated with the payment sender, the at least one future time-slot to which the incentive was assigned.

3. The method according to claim 1, wherein the plurality of future time-slots are successive time-slots; and

wherein determining whether the present-time slot is the future time-slot into which the payment to the second account is scheduled includes determining, by the server, in each of the successive time-slots whether a present time-slot is the future time-slot into which the payment to the sender is scheduled.

4. The method according to claim 1, wherein, for the at least one future time-slot to which the incentive is assigned, the incentive is a reward, the reward being higher if the estimated number of payments the server will have to perform in the at least one future time-slot is lower.

5. The method according to claim 1, wherein determining, for each of the plurality of future time-slots, the estimate of future traffic on the P2P network includes:

using said historical data to estimate, for the future time period including the future time-slots, a corresponding estimate of the number of payments the server will have to perform during the future time period; and

deriving said estimate of the number of payments the server will have to perform during each future time-slot by partitioning among the future time-slots the estimated number of payments the computer will have to perform during the future time period.

6. The method according to claim 5, wherein the historical data describing the traffic on the P2P network, including the previous payments, includes at least one of:

data indicative of a daily trend in a number of payments the server is requested to perform;

data indicative of a monthly trend in the number of payments the server is requested to perform; and/or

data indicative of an annual trend in the number of payments the server is requested to perform.

7. The method according to claim 1, further comprising, after receiving the selection of the future time slot from the at least one presented future time-slot:

increasing the estimated number of payments the server will have to perform in the selected future time-slot; and

for at least one of the plurality of future time-slots, updating an incentive assigned thereto.

8. The method according to claim 1, wherein the request to make the payment to the payment recipient includes:

payment account data including data sufficient to identify the issuer, and data sufficient to identify, at least to the issuer, the payment account of the payment sender; and

contact data of the payment recipient;

wherein the method further comprises contacting the payment recipient using the contact data, and receiving, from the payment recipient, payment account data comprising data sufficient to identify the acquirer, and data sufficient to identify, at least to the acquirer, the payment account of the payment recipient.

9. A server for use in smoothing traffic on a peer-to-peer (P2P) network, the server comprising a processor and a data storage device storing program instructions, wherein the program instructions, when executed by the processor, cause the processor to:

access a database including historical data describing traffic on the P2P network, the traffic including previous payments;

segment a future time period into a plurality of future time-slots and, based on the historical data, determine, for each of the plurality of future time-slots, an estimate of future traffic on the P2P network, the future traffic on the P2P network including a number of future payments the server will have to perform in the future time-slot;

based on said estimates, assign to at least one of the plurality of future time-slots, an incentive;

receive, from a communication device associated with a payment sender, a request to make a payment from a first payment account maintained by an issuer and associated with the payment sender, to a payment recipient, said payment recipient associated with a second payment account maintained by an acquirer;

in response to the request, present, to the communication device associated with the payment sender, the at least one of the plurality of future time-slots to which the incentive was assigned;

receive, from the communication device associated with the payment sender, a selection of a future time-slot from the presented at least one of the plurality of future time-slots;

in response to the selection, enter the payment to the second payment account into the selected future time-slot in a scheduling database, the scheduling database including scheduling data for a plurality of different payments;

based on the scheduling data, determine whether a present timeslot is the selected future time-slot into which the payment to the second account is scheduled; and

when the present time-slot is the selected future time-slot into which the payment to the second account is scheduled, communicate with at least one of the issuer and acquirer, to cause the payment to the second payment account within the selected future time-slot, whereby the server is enabled to smooth traffic on the P2P network over time and reduce computation resource requirements at peak times.

10. The server according to claim 9, wherein the program instructions, when executed by the processor, cause the processor to present to the communication device associated with the sender, for the presented at least one of the plurality of future time-slots to which an incentive was assigned, the corresponding incentive.

11. The server according to claim 9, wherein the program instructions, when executed by the processor, further cause the processor to:

upon receiving said request, transmit to the communication device associated with the payment sender a query of whether the payment to the second account is urgent;

receive from the payment sender a response to the query; and

present to the communication device associated with the payment sender, the at least one of the plurality of future time-slots to which the incentive was assigned only when the response to the query is negative.

12. The server according to claim 9, wherein, for the at least one of the plurality of future time-slots to which the incentive is assigned, the incentive is a reward, the reward being higher if the estimated number of payments the server will have to perform in the at least one of the plurality of future time-slots is lower.

13. The server according to claim 9, wherein the program instructions, when executed by the processor, cause the processor, in order to determine, for each of the plurality of future time-slots, the estimate of future traffic on the P2P network, to:

use said historical data to estimate, for the future time period including the future time-slots, a corresponding estimate of the number of payments the server will perform during the future time period; and

derive said estimate of the number of payments the server will perform during each future time-slot by partitioning among the future time-slots the estimated number of payments the computer will have to perform during the future time period.

14. The server according to claim 9, wherein the historical data describing the traffic on the P2P network, including the previous payments, includes at least one of:

data indicative of a daily trend in a number of payments the server is requested to perform;

data indicative of a monthly trend in the number of payments the server is requested to perform; and/or

data indicative of an annual trend in the number of payments the server is requested to perform.

15. The server according to claim 9, wherein the program instructions, when executed by the processor, further cause the processor to, after receiving the selection of the future time slot from the at least one presented future time-slot:

increase the estimated number of payments the server will have to perform in the selected future time-slot; and

for at least one of the plurality of future time-slots, update an incentive assigned thereto.

16. The server according to claim 9, wherein the request to make the payment to the payment recipient includes:

payment account data including data sufficient to identify the issuer, and data sufficient to identify, at least to the issuer, the payment account of the payment sender; and

contact data of the payment recipient; and

wherein the program instructions, when executed by the processor, further cause the processor to contact the payment recipient using the contact data, and receive, from the payment recipient, payment account data, which includes data sufficient to identify the acquirer and data sufficient to identify, at least to the acquirer, the payment account of the payment recipient.

17. A non-transitory computer readable storage medium including computer-executable instructions, which when executed by a processor, cause the processor to:

access a database including historical data describing traffic on a peer-to-peer (P2P) network, the traffic including previous payments;

segment a future time period into a plurality of future time-slots;

based on the historical data, determine, for each of the plurality of future time-slots, an estimate of future traffic on the P2P network, the future traffic on the P2P network including a number of future payments the server will have to perform in the future time-slot;

based on said estimates, assign to at least one of the plurality of future time-slots, an incentive;

receive, from a communication device associated with a payment sender, a request to make a payment from a first payment account maintained by an issuer and associated with the payment sender, to a payment recipient, said payment recipient associated with a second payment account maintained by an acquirer;

in response to the request, present, to the communication device associated with the payment sender, the at least one of the plurality of future time-slots to which the incentive was assigned;

receive, from the communication device associated with the payment sender, a selection of a future time-slot from the presented at least one of the plurality of future time-slots;

in response to the selection, enter the payment to the second payment account into the selected future time-slot in a scheduling database, the scheduling database including scheduling data for a plurality of different payments;

based on the scheduling data, determine whether a present timeslot is the selected future time-slot into which the payment to the second account is scheduled; and

when the present time-slot is the selected future time-slot into which the payment to the second account is scheduled, communicate with at least one of the issuer and acquirer, to cause the payment to the second payment account within the selected time-slot, whereby the server is enabled to smooth traffic on the P2P network over time and reduce computation resource requirements at peak times.