Claims

1. A computer-implemented method, comprising:

dynamically calculating supply and demand of queue slots available to visitors to a plurality of spaced-apart attractions distributed across a domain; and

dynamically managing reservations of queue slots made by visitors based on the supply and demand and/or

dynamically providing incentives to visitors for influencing behaviour and/or location of visitors in the domain based on the supply and demand.

2. The method of claim 1, wherein dynamically calculating supply and demand of queue slots available to visitors to a plurality of spaced-apart attractions distributed across a domain comprises:

dynamically predicting the supply of queue slots available to visitors to a plurality of spaced-apart attractions distributed across a domain, the queue slots having specified times; and

dynamically predicting demand for the queue slots by visitors for the plurality of spaced-apart attractions.

3. The method of claim 1 or 2, wherein each queue slot has a respective cost and dynamically managing reservations of the queue slots is based on costs of the queue slots.

4. The method of any one of claims 1 to 3, further comprising:

allocating a reward to a user which is redeemable to secure a given queue slot.

5. The method of any one of claims 1 to 4, further comprising:

generating an itinerary plan for a visitor, the itinerary plan including a list which includes an attraction based on an allocated queue slot or a list of two or more attractions or three or more attractions, arranged in order, having allocated queue slots for the visitor.

6. The method of any one of claims 1 to 5, wherein dynamically calculating supply and demand of queue slots comprises:

receiving current pricing data which includes a current value of a cost of securing a slot to an attraction and a current value of a reward for visiting the attraction, current

index data relating to current operational conditions of attractions, target index data relating to desired operational conditions of attractions and sorted pricing data comprising a set of factors which affect a cost of securing a slot to an attraction and a set of corresponding weights for the set of factors;

providing the current pricing data, current index data, target index data and sorted pricing data to an optimization algorithm to find adjusted price data; and

upon reaching a predetermined target, outputting the adjusted price data.

7. The method of claim 6, wherein the operational conditions of attractions include crowd distribution in a domain across which attractions are distributed.

8. The method of claim 6 or 7, wherein the operational conditions of attractions include waiting times of attractions.

9. The method of claim 8, wherein the waiting times of attractions include normal line waiting times and fast line waiting times.

10. The method of any one of claims 6 to 9, wherein the operational conditions of attractions comprise popularity of attractions.

11. The method of any one of claims 6 to 10, wherein the reward for visiting the attraction is expressed as a number of tokens.

12. The method of any one of claims 6 to 11, wherein the optimization algorithm is a Bayesian optimization algorithm.

13. The method of any one of claims 6 to 12, wherein the optimization algorithm comprises a Gaussian process regressor and an acquisition function.

14. The method of any one of claims 6 to 13, wherein the set of factors which affect the cost of securing the slot to the attraction include a type of day, wherein types of day include a week day, a day of a weekend or a holiday.

15. The method of any one of claims 6 to 14, wherein the set of factors which affect the cost of securing the slot to the attraction include seasonality, wherein seasonality includes peak or off-peak.

16. The method of any one of claims 1 to 15, wherein dynamically managing reservations of queue slots made by visitors based on supply and demand comprises:

in response to a user request, selecting at least one ride and at least one queue slot which is relatively less popular than a queue slot for the ride or another ride and presenting the selected ride(s) and queue slot (s) to the visitor.

17. The method of claim 16, wherein the queue slot for the ride or other ride is requested by the user in the user request.

18. The method of any one of claims 1 to 17, wherein dynamically providing incentives to visitors for influencing behaviour and/or location of visitors in the domain based on the supply and demand, comprises:

receiving status information about visitor(s) in a domain across which a plurality of spaced-apart attractions are distributed;

generating an incentive for affecting behaviour and/or location of a visitor in dependence upon the status information; and

transmitting the incentive to a mobile device of the visitor.

19. The method of claim 18, wherein the status information indicates a crowding condition in a first region and the incentive is for encouraging the visitor to visit a second region which does not have a crowing condition.

20. The method of claim 18 or 19, wherein the status information indicates compliance with a proposed itinerary and the incentive is for rewarding with a proposed itinerary or encouraging compliance with a future proposed itinerary.

21. The method of any one of claims 18 to 20, wherein the status information indicates a shortfall in delivery and the incentive is for compensating the visitor.

22. The method of any one of claims 18 to 21, wherein the incentive comprises a voucher in relation to a product or service.

23. The method of any one of claims 18 to 22, wherein the incentive comprises a gift.

24. The method of any one of claims 18 to 23, wherein generating the incentive depends on rewards earnt by the visitor in the domain.

25. The method of any one of claims 18 to 24, further comprising:

receiving historical queue data about queue lengths for a plurality of spaced-apart attractions distributed across a domain;

receiving predicted queue data about the queue lengths for the plurality of spaced-apart attractions;

receiving information about visitors currently in the domain; and

in dependence on the historical and predicted queue data, and the information about visitors currently in the domain, generating incentives for at least some of the visitors currently in the domain to encourage at least some of the visitors to move to given areas within the domain.

26. The method of claim 25, wherein the incentives include vouchers for redemption at retail outlets.