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(54) **COMPETITIONS WITH RESTAURANT TASK PERFORMANCE INDICATOR FEEDBACK**

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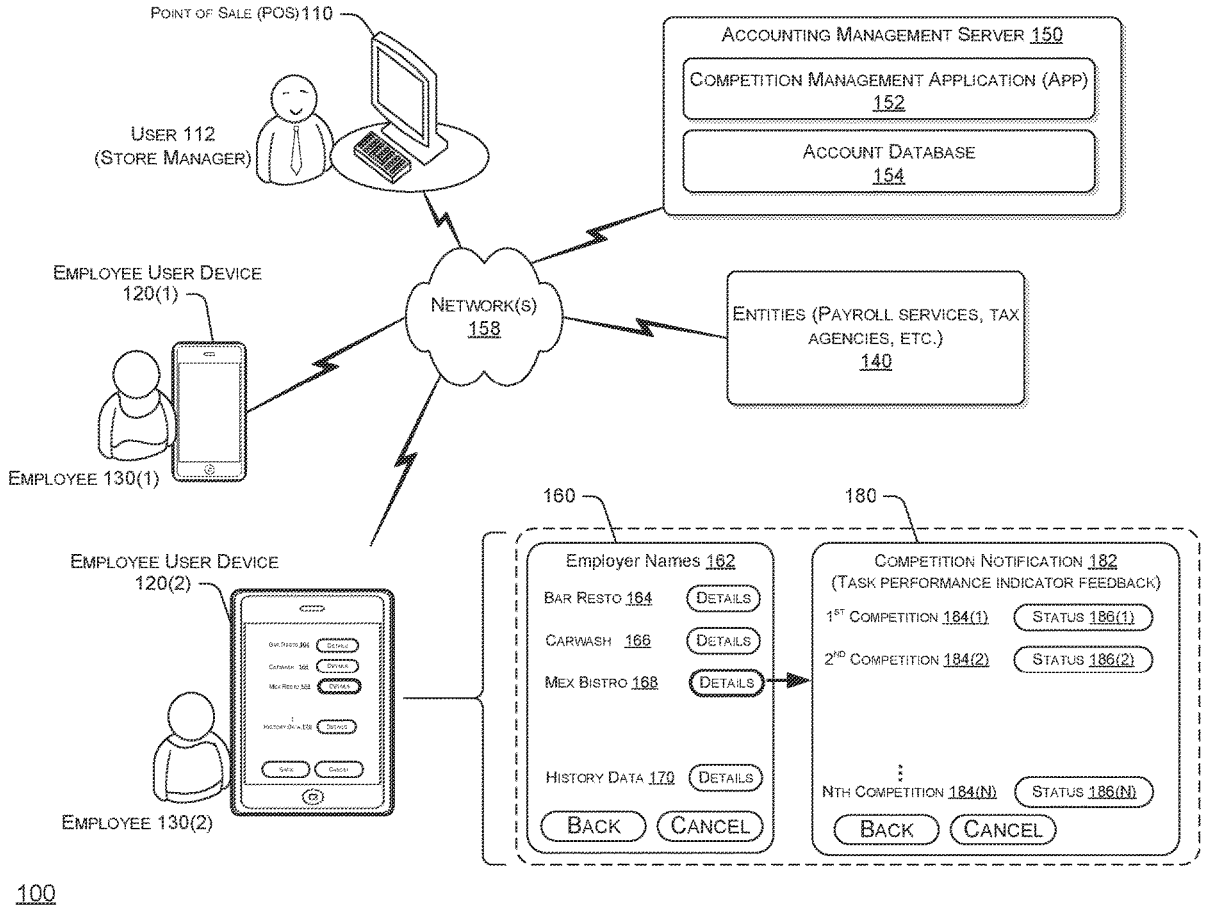
(57) **ABSTRACT**

This disclosure describes disclosure describes systems and methods for competitions with restaurant task performance indicator feedback. Competitions for restaurant workers may include attempting to achieve a mark towards a goal that can be defined by restaurant owners or operators for a variety of purposes. Competition awards may be given to the restaurant workers to obtain the goal such as promoting a particular product or improving services offered by the restaurant owners or operators.



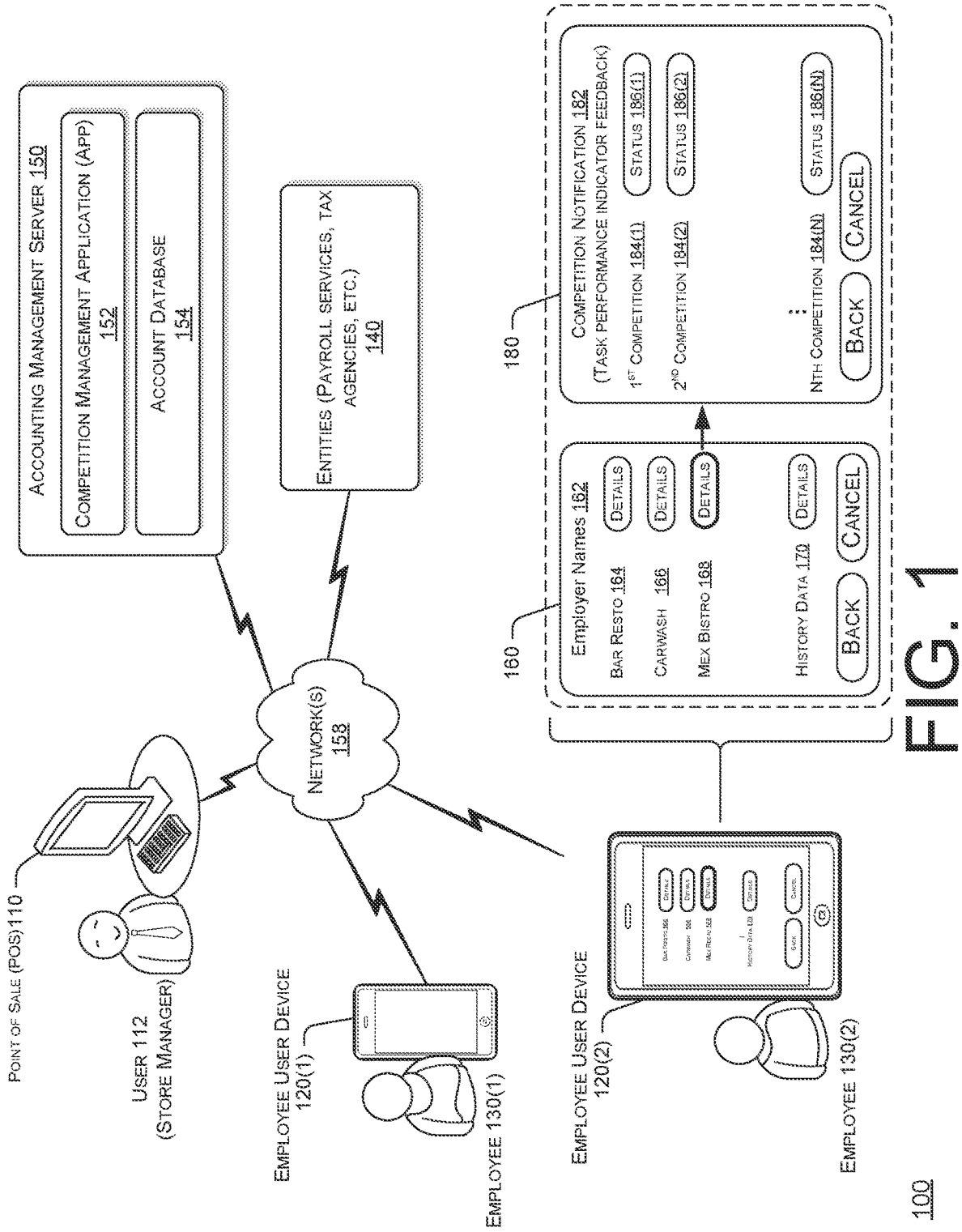

ACCOUNTING MANAGEMENT SERVER 150
COMPETITION MANAGEMENT APPLICATION (APP) 152
ACCOUNT DATABASE 154
ENTITIES (PAYROLL SERVICES, TAX AGENCIES, ETC.) 140
NETWORK(S) 158
POINT OF SALE (POS) 110
USER 112 (STORE MANAGER)
EMPLOYEE USER DEVICE 120(1)
EMPLOYEE 130(1)
EMPLOYEE USER DEVICE 120(2)
EMPLOYEE 130(2)
160
EMPLOYER NAMES 162
BAR RESTO 164
CARWASH 166
MEX BISTRO 168
HISTORY DATA 170
DETAILS
BACK
CANCEL
180
COMPETITION NOTIFICATION 182
(TASK PERFORMANCE INDICATOR FEEDBACK)
1ST COMPETITION 184(1)
2ND COMPETITION 184(2)
NTH COMPETITION 184(N)
STATUS 186(1)
STATUS 186(2)
STATUS 186(N)
100

FIG. 1

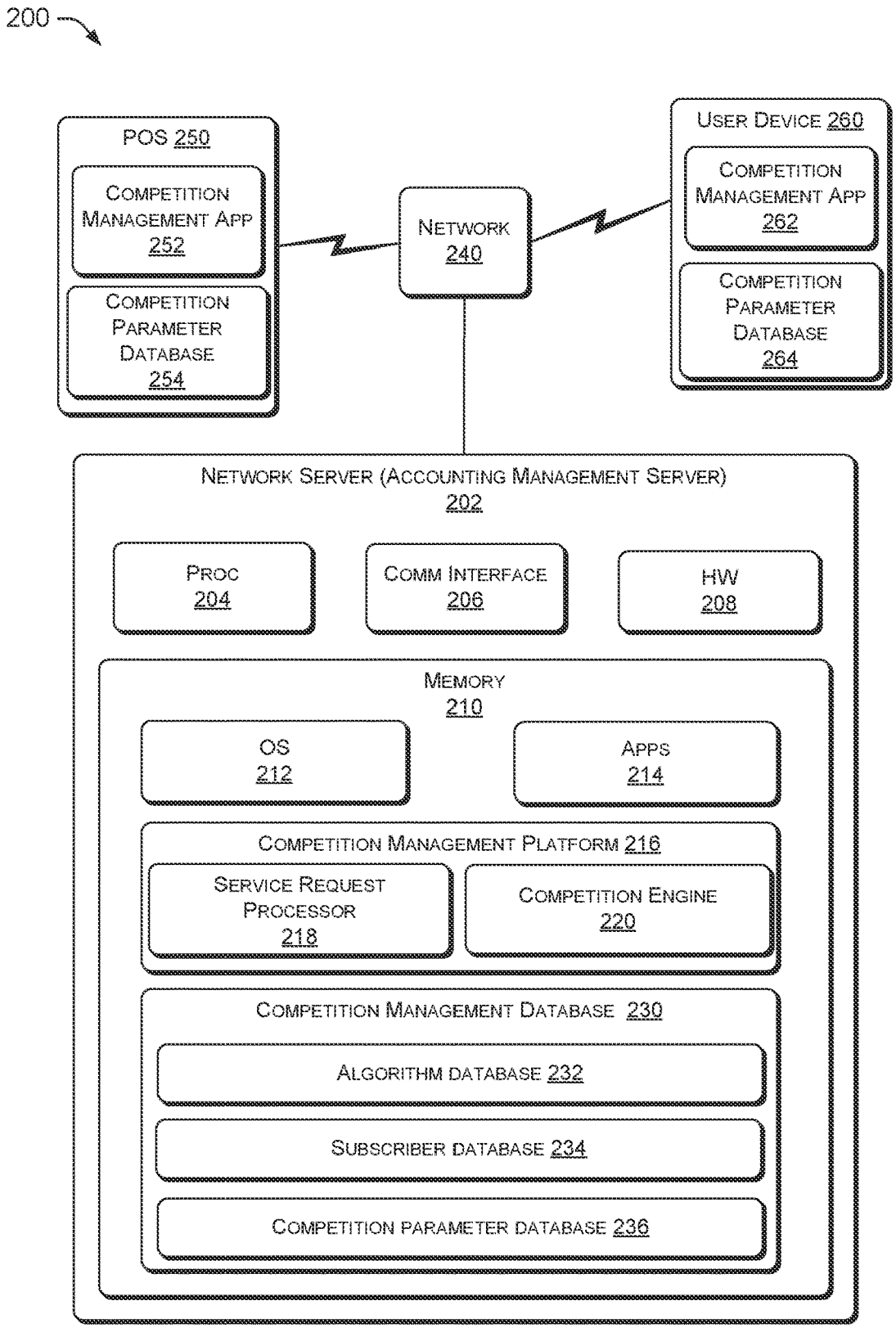

200
POS 250
COMPETITION MANAGEMENT APP 252
COMPETITION PARAMETER DATABASE 254
NETWORK 240
USER DEVICE 260
COMPETITION MANAGEMENT APP 262
COMPETITION PARAMETER DATABASE 264
NETWORK SERVER (ACCOUNTING MANAGEMENT SERVER) 202
PROC 204
COMM INTERFACE 206
HW 208
MEMORY 210
OS 212
APPS 214
COMPETITION MANAGEMENT PLATFORM 216
SERVICE REQUEST PROCESSOR 218
COMPETITION ENGINE 220
COMPETITION MANAGEMENT DATABASE 230
ALGORITHM DATABASE 232
SUBSCRIBER DATABASE 234
COMPETITION PARAMETER DATABASE 236

FIG. 2

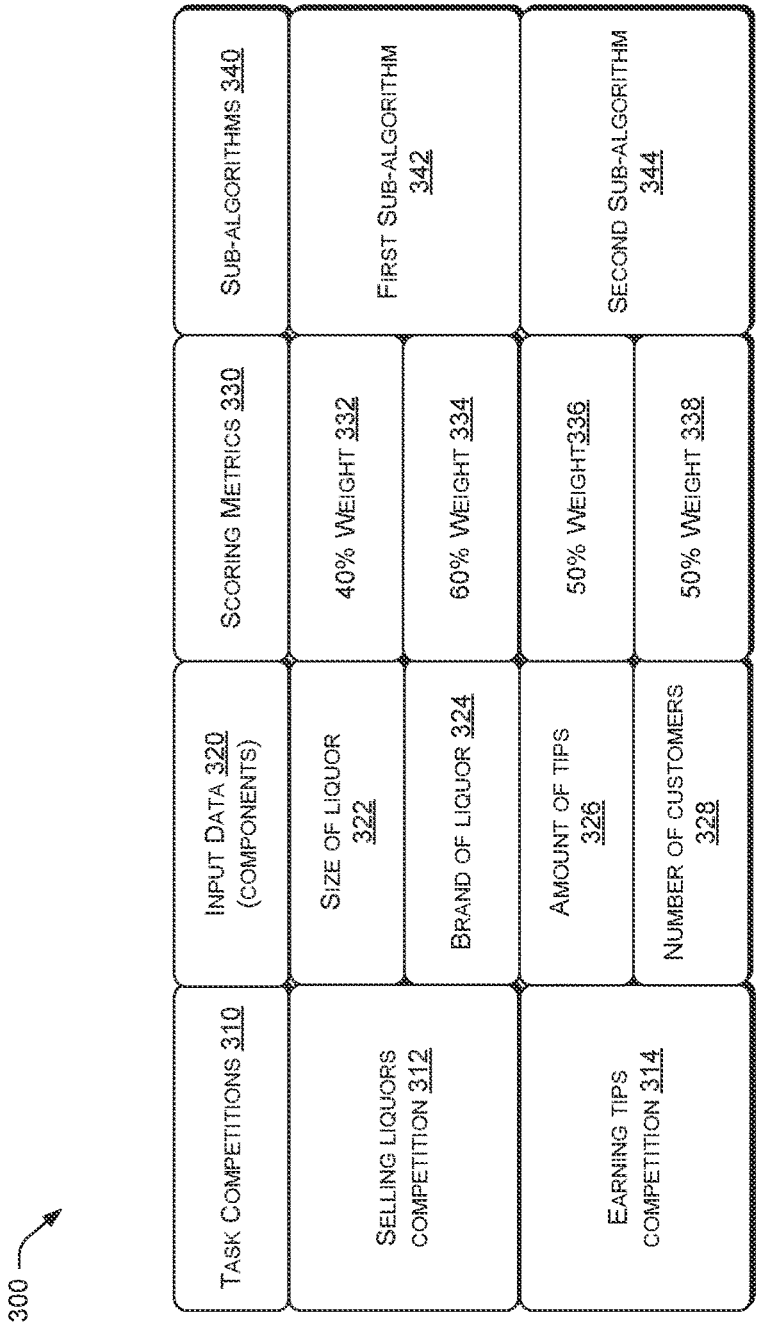

300
TASK COMPETITIONS 310
INPUT DATA 320 (COMPONENTS)
SCORING METRICS 330
SUB-ALGORITHMS 340
SELLING LIQUORS COMPETITION 312
SIZE OF LIQUOR 322
40% WEIGHT 332
FIRST SUB-ALGORITHM 342
BRAND OF LIQUOR 324
60% WEIGHT 334
EARNING TIPS COMPETITION 314
AMOUNT OF TIPS 326
50% WEIGHT336
SECOND SUB-ALGORITHM 344
NUMBER OF CUSTOMERS 328
50% WEIGHT 338

FIG. 3

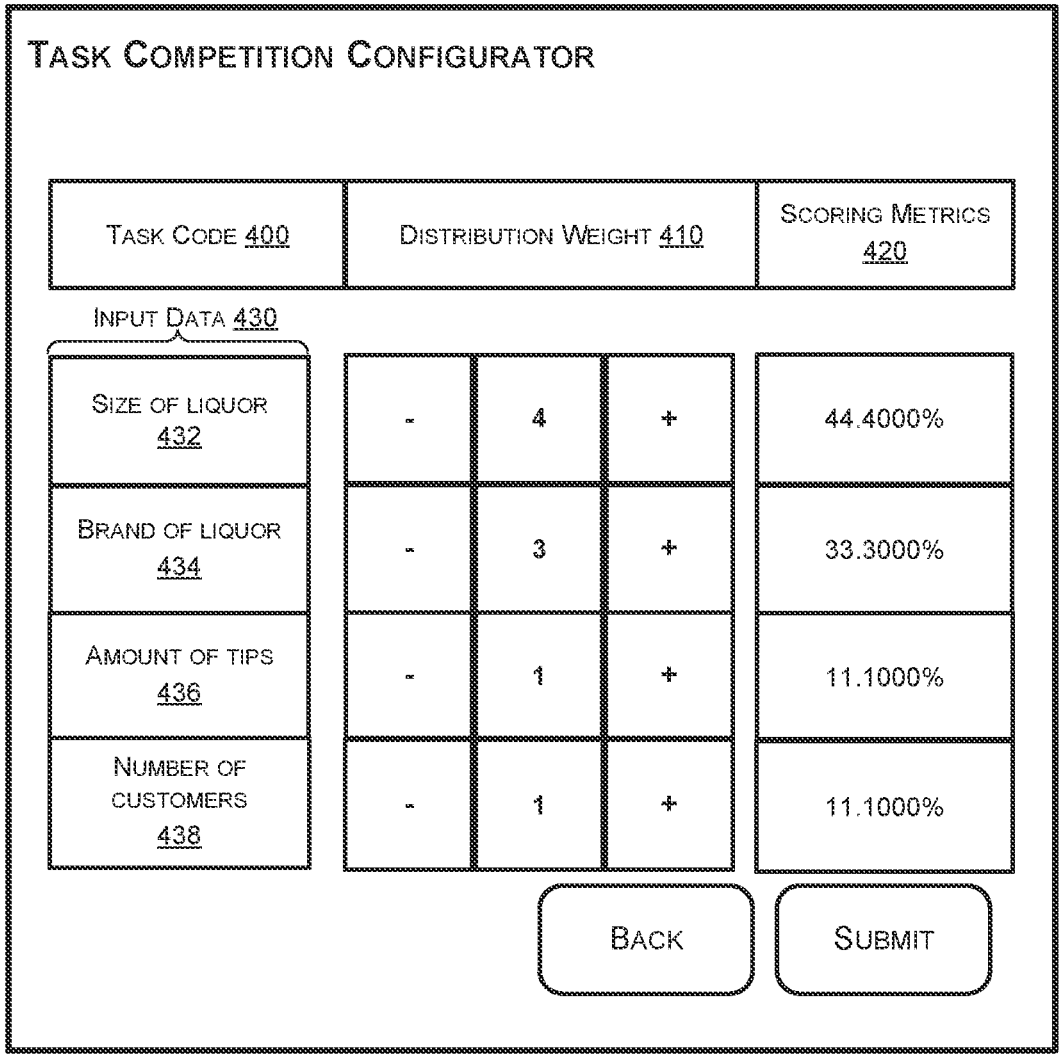

TASK COMPETITION CONFIGURATOR
TASK CODE 400
DISTRIBUTION WEIGHT 410
SCORING METRICS 420
INPUT DATA 430
SIZE OF LIQUOR 432
BRAND OF LIQUOR 434
AMOUNT OF TIPS 436
NUMBER OF CUSTOMERS 438
-
4
+
44.4000%
-
3
+
33.3000%
-
1
+
11.1000%
-
1
+
11.1000%
BACK
SUBMIT

FIG. 4

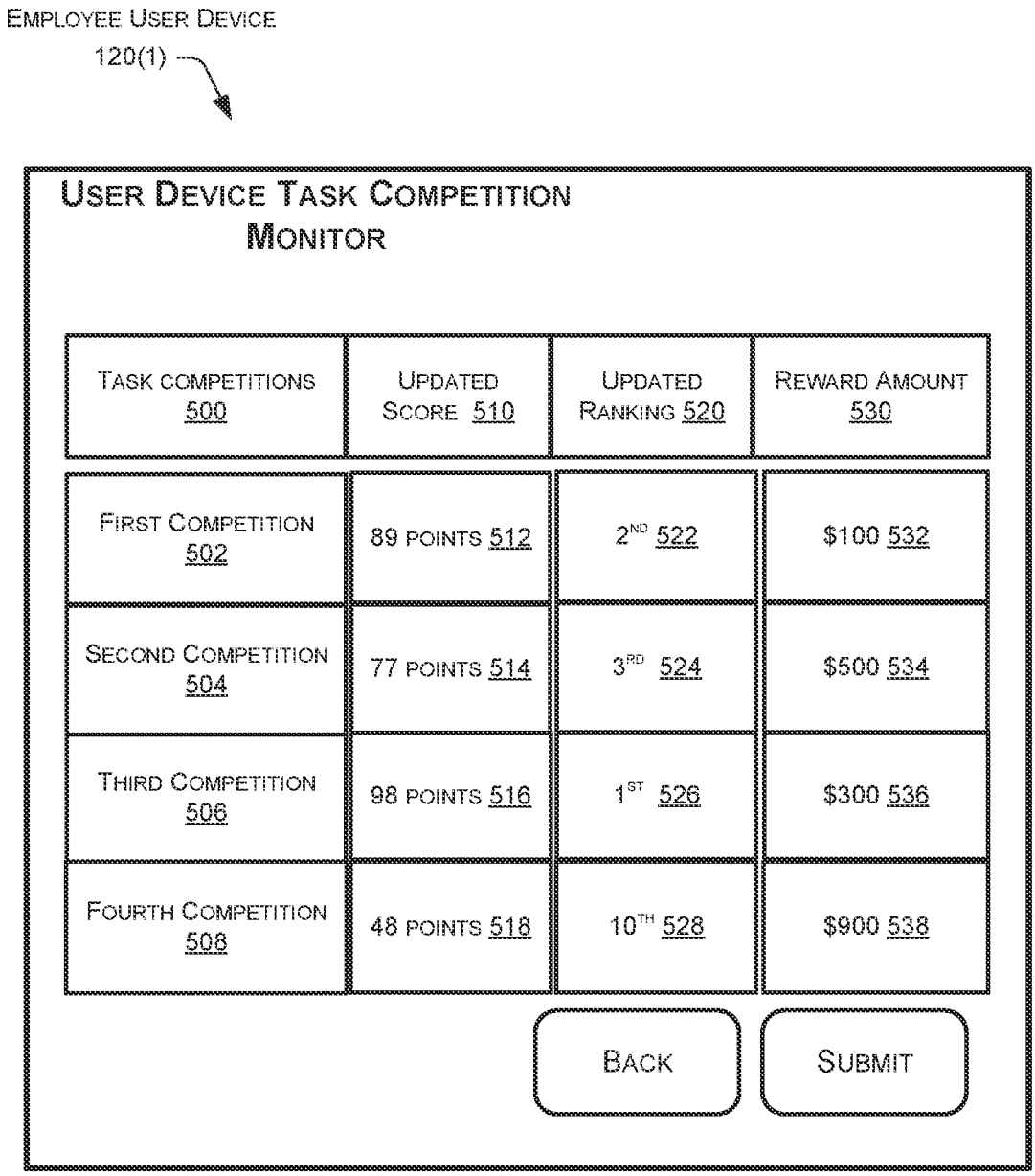

EMPLOYEE USER DEVICE
120(1)
USER DEVICE TASK COMPETITION MONITOR
TASK COMPETITIONS 500
UPDATED SCORE 510
UPDATED RANKING 520
REWARD AMOUNT 530
FIRST COMPETITION 502
89 POINTS 512
2ND 522
$100 532
SECOND COMPETITION 504
77 POINTS 514
3RD 524
$500 534
THIRD COMPETITION 506
98 POINTS 516
1ST 526
$300 536
FOURTH COMPETITION 508
48 POINTS 518
10TH 528
$900 538
BACK
SUBMIT

FIG. 5

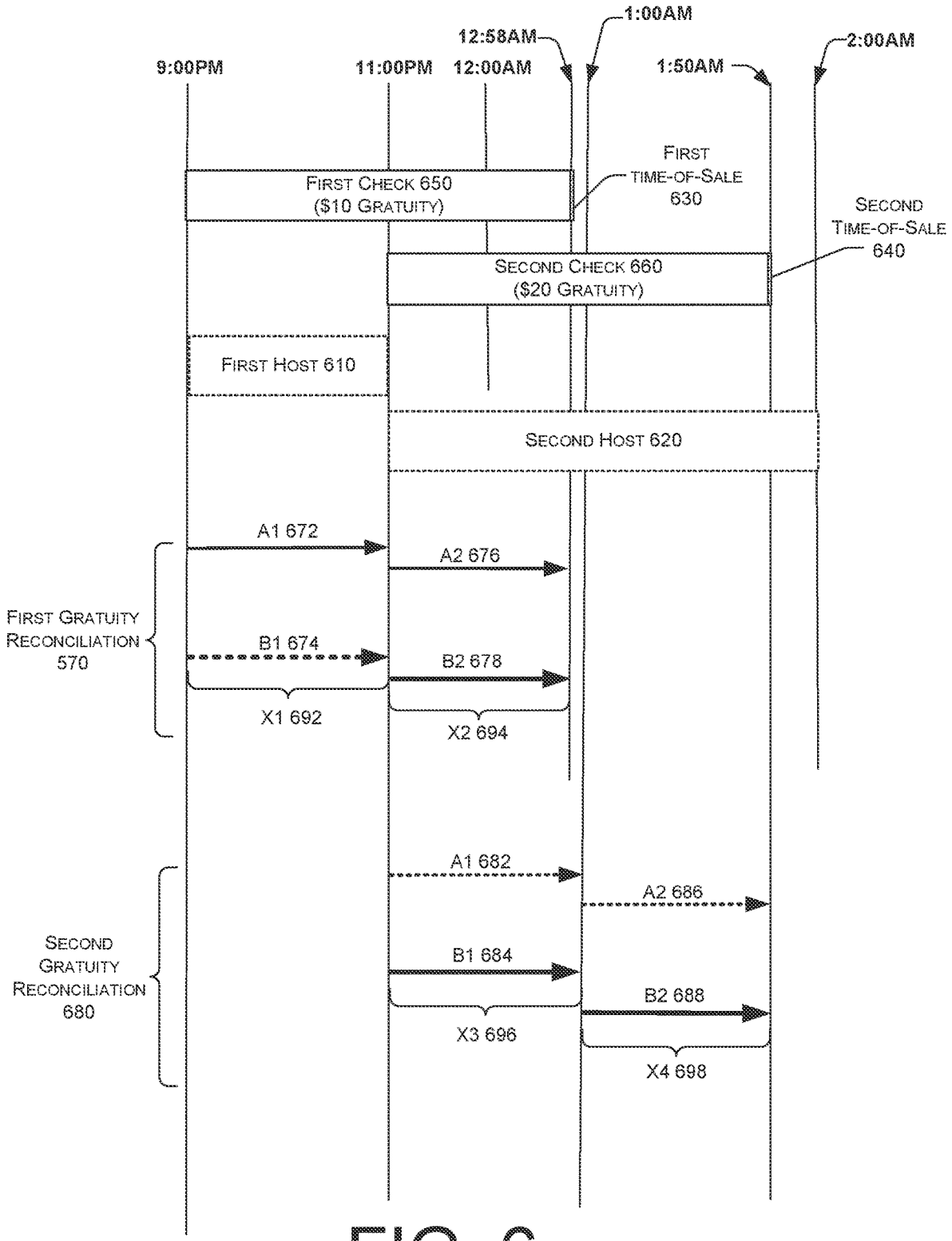

9:00PM
11:00PM
12:00AM
12:58AM
1:00AM
1:50AM
2:00AM
First Check 650
($10 Gratuity)
First Time-of-Sale 630
Second Time-of-Sale 640
Second Check 660
($20 Gratuity)
First Host 610
Second Host 620
A1 672
A2 676
First Gratuity Reconciliation 570
B1 674
B2 678
X1 692
X2 694
A1 682
A2 686
Second Gratuity Reconciliation 680
B1 684
B2 688
X3 696
X4 698

FIG. 6

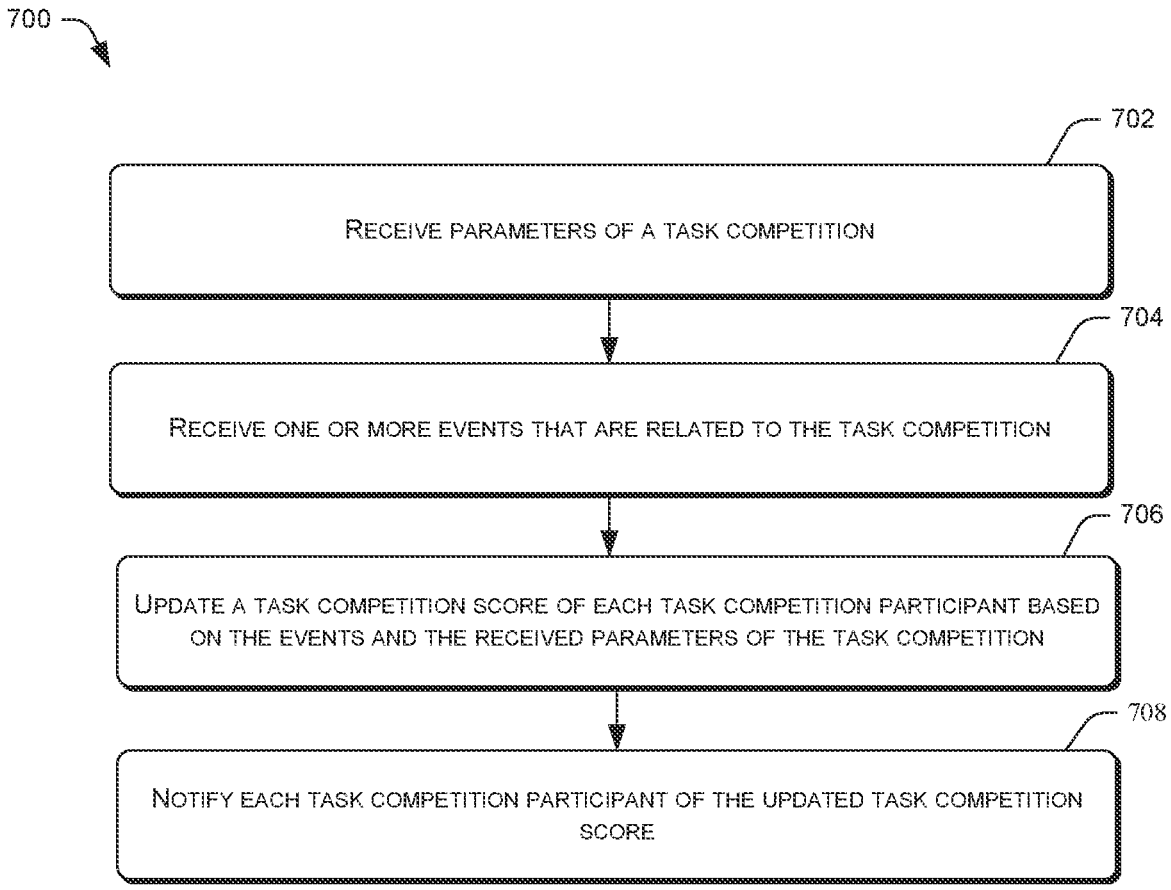

700
702
RECEIVE PARAMETERS OF A TASK COMPETITION
704
RECEIVE ONE OR MORE EVENTS THAT ARE RELATED TO THE TASK COMPETITION
706
UPDATE A TASK COMPETITION SCORE OF EACH TASK COMPETITION PARTICIPANT BASED ON THE EVENTS AND THE RECEIVED PARAMETERS OF THE TASK COMPETITION
708
NOTIFY EACH TASK COMPETITION PARTICIPANT OF THE UPDATED TASK COMPETITION SCORE

FIG. 7

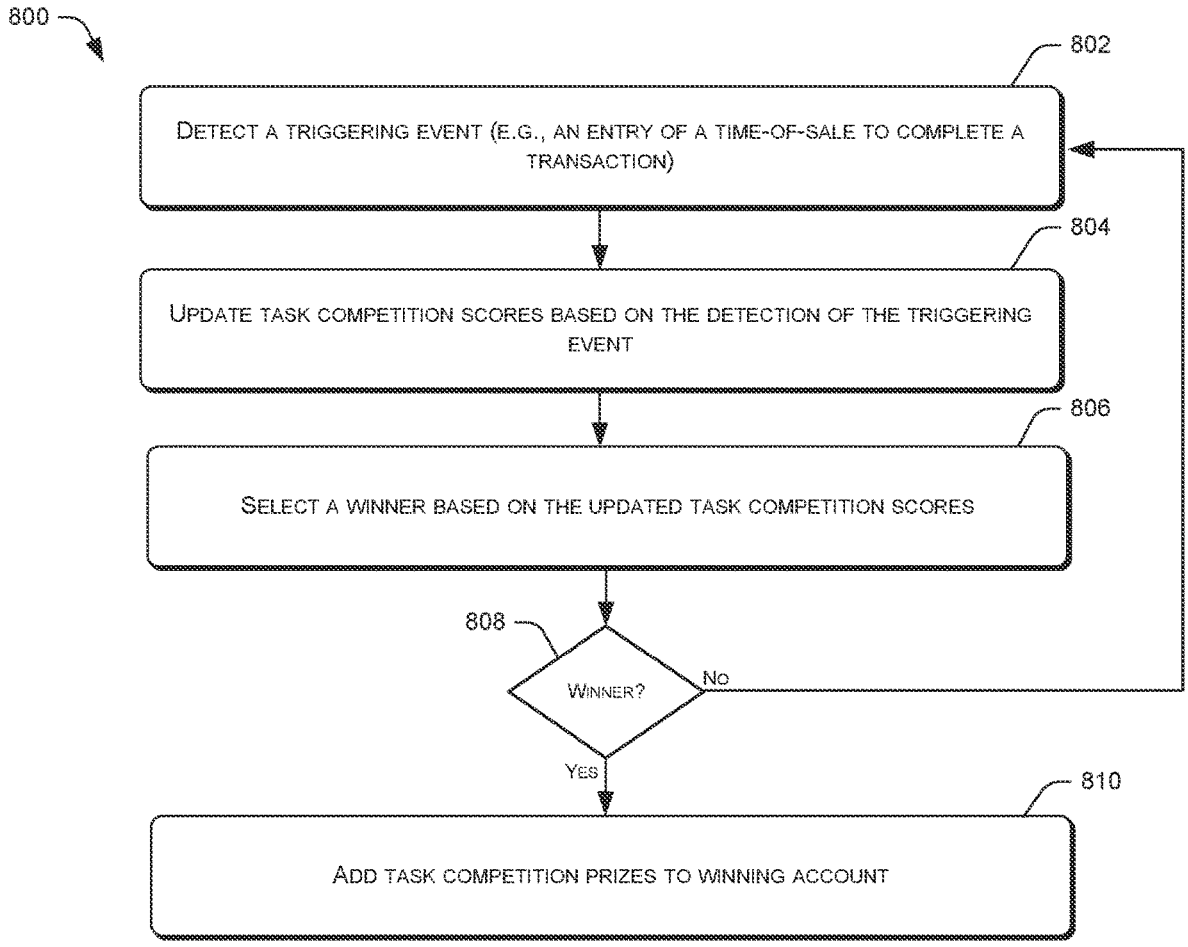

800
802
DETECT A TRIGGERING EVENT (E.G., AN ENTRY OF A TIME-OF-SALE TO COMPLETE A TRANSACTION)
804
UPDATE TASK COMPETITION SCORES BASED ON THE DETECTION OF THE TRIGGERING EVENT
806
SELECT A WINNER BASED ON THE UPDATED TASK COMPETITION SCORES
808
WINNER?
NO
YES
810
ADD TASK COMPETITION PRIZES TO WINNING ACCOUNT

FIG. 8

COMPETITIONS WITH RESTAURANT TASK PERFORMANCE INDICATOR FEEDBACK

BACKGROUND

[0001] For certain service-based businesses, it is customary for customers to give a gratuity, or tip, to one or more employees who perform a service. Although a business customer may primarily interact with a subset of employees of the service-based business, such as a server and a host of a restaurant, many other employees may have contributed or assisted in varying degrees in supporting the service provided to the customer. In a restaurant, for example, a host may initially entertain and seat the customer to a table, a kisser may set and clear the table, a food runner may deliver food to the table, a bartender may prepare and/or serve alcoholic beverages, a valet driver may bring customer's car to a main entrance, and other employees may similarly provide specific services for the benefit of the customer during their dining experience.

[0002] At an end of a customer transaction, such as when the customer pays for the service, the customer may have the opportunity to give a gratuity directly to the server or add the gratuity to an amount paid for the meal, for example. In some scenarios, the gratuity encourages the employees to enhance their customer service skills to gain more customers and thus, a greater number of tips. In other scenarios, a focus on gratuities can be out of alignment with other business goals. Accordingly, different performance indicators may be desirable.

BRIEF DESCRIPTION OF THE DRAWINGS

[0003] The detailed description is set forth with reference to the accompanying figures. In the figures, the left-most digit(s) of a reference number identifies the figure in which the reference number first appears. The use of the same reference numbers in different figures indicates similar or identical items or features.

[0004] FIG. **1** is a diagram of an example computing environment, in accordance with at least one embodiment.

[0005] FIG. **2** is a diagram of an example computing environment including a competition engine, in accordance with at least one embodiment.

[0006] FIG. **3** is a diagram of an example data structure that can be used by the competition engine to identify parameters of task competitions in the subscriber establishment, in accordance with at least one embodiment.

[0007] FIG. **4** is an example subscriber user interface that shows accessing of a competition configurator for manual configuration of various fields and conditions that may effect changes in input data and scoring metrics for the task competitions, in accordance with at least one embodiment.

[0008] FIG. **5** is an example user device interface that shows accessing a competition monitor to view the task competitions and corresponding updated scores and ranking of a task competition participant in the task competitions, in accordance with at least one embodiment.

[0009] FIG. **6** is an example of apportionment of regular gratuities, in accordance with at least one embodiment.

[0010] FIG. **7** is a flow diagram of an example procedure, in accordance with at least one embodiment.

[0011] FIG. **8** is a flow diagram of another example procedure, in accordance with at least one embodiment.

DETAILED DESCRIPTION

[0012] This disclosure describes systems and methods for competitions with restaurant task performance indicator feedback. Competitions for restaurant workers may include attempting to achieve a mark towards a goal that can be defined by restaurant owners or operators for a variety of purposes. Competition awards may motivate the restaurant workers and can be targeted to a variety of restaurant owner or operator goals such as average or highest revenue per customer or per table, average or highest tip per table or per customer, average or lowest table occupancy time, number of targeted menu items or drinks, and repeat customer statistics. In one embodiment, restaurant owners may use a graphical user interface to define the competitions from templates or task components. A competition engine may use the competition definitions to process competition-relevant events (or input data) generated by restaurant workers and maintain corresponding restaurant worker competition scores. Notifications, including real-time updates, may be sent to participating restaurant workers regarding their competition status and/or progress of each competition in which they are participating, and these notifications may serve as the restaurant task performance indicator feedback. When a competition is finished in accordance with the competition definition, the competition awards, including monetary awards, may be distributed to competition participants who qualify in accordance with the competition definition.

[0013] Worker gratuities may be derived directly from customers (regular gratuity) or sponsored by the restaurant owner and/or a distributor of a product or service to be promoted (sponsored gratuity). Distribution of the regular gratuity may be based upon employees' preconfigured percentage sharing, where the employees' percentages can be associated with their assigned or actual working hours; participation over a particular service or order; length of overlapping shifts between employees; employees' positions/levels; and other preconfigured conditions that relate to an apportioning of the regular gratuities pooled within a gratuity distribution period. The distribution (or sharing) of the sponsored gratuity may be based upon winning competition awards in a task competition such as, but not limited to, competing on amount of revenue per customer, tip per customer, number of customers served, a number of repeat customers served, earliest arrival at the job site, and the like, within the gratuity distribution period. In one instance, the competition award can be a form of gratuity such as the sponsored gratuity. Alternatively, or in addition, the competition award may be classified as a type of income that is different from the gratuity as another type of income. For example, as a condition of a worker's employment, the competition award may be treated as a Miscellaneous Income and declared via a Form 1099 for tax purposes while the gratuities are added in the worker's regular wages. In this example, the competition award is not a form of gratuity or even a sponsored gratuity and thus treated as an independent type of income of the worker. For illustration purposes in the discussion below, the competition award may be a form of "sponsored gratuity" and interchangeably referred to as sponsored gratuity, which is distinct from the regular gratuity.

[0014] In one embodiment, the distribution of the regular gratuity may be independently calculated from the competition award although events during the apportionment of the

regular gratuity can also be used to trigger distribution of the competition award. In this embodiment, the competition award may be treated as a form of sponsored gratuity in a case where the worker's condition of employment treats the competition award as another form of gratuity type of income rather than a separate type of income in the preceding example.

[0015] The gratuity distribution period may include a distribution frequency of the gratuities to employees, which frequency can be hourly, daily, weekly, end of working shift, end of the month, or some other periodic pattern. The gratuity distribution period can also be set according to an aperiodic factor such as, without limitation, when it is based on the time of sale where the gratuity distribution period can be defined by a start/opening of an order or transaction (such as a bartender entering a liquor tab number for a customer or a host registering a particular dining table for the customer) to closing or entry of the time-of-sale (input data entries at, e.g., a register) for the rendered service or completed order; the time a delivery person leaves with an order until the order is delivered; the time a task competition participant wins a restaurant task competition or some other aperiodic pattern. The gratuity distribution period may be different from an employee's pay period or payment of wage, which can cover multiple gratuity distribution periods.

[0016] As described herein, gratuities may include the sponsored gratuities that can be derived from a subscriber establishment itself or from a sponsor of the product or services to be rendered by the subscriber establishment. For example, the sponsored gratuities may include the task competition awards or prizes given by the subscriber establishment or a distributor of the products that are sold in the subscriber establishment. Gratuities may also include regular gratuities that can be pooled from the customers of the subscriber establishment. For example, the regular gratuities may include diner tips, gifts, presents, donations, or handouts from the customer. These gratuities can be distributed to the employees in addition to any corresponding base wages.

[0017] In one embodiment, a user such as a store manager may preconfigure the percentage sharing of a particular employee over the pooled regular gratuity based upon the employee's time of work, participation over the rendered service or completed order, position or change in position during the rendering of the service or order, user profile, and/or other criteria or parameters that can distinguish the percentage sharing of the particular employee from that of another employee. The store manager may also preconfigure parameters of the restaurant task competition including an identification of the task competition, input data, and scoring schemes to receive or win the task competition. In such embodiments, the distribution of the pooled regular gratuity may use a separate algorithm from the distribution of the competition award. In some embodiments, an integrated algorithm may be utilized to distribute the regular gratuity and the competition award (or sponsored gratuity).

[0018] The gratuities including the competition award (or algorithm output data in some examples) may then be forwarded to one or more entities such as a bank or other financial institution, tax agency, bankruptcy court, collecting agency, credit card companies, etc. that can further utilize and process the output data for other purposes such as, without limitation, direct payment by bank of employee's wages, tax agency updating employee's income tax returns, bankruptcy court garnishing or levying the employee's gratuity shares/income, and the like. This technique of automating the distribution of the gratuities including the competition awards over the gratuity distribution period may improve business accounting efficiency and can further increase cohesion among employees on account of visibility into the sharing to assure that gratuities and competition awards are shared fairly and/or according to a known policy. Further, task competitions may further engage the employees to improve their customer service skills and motivate them to promote the subscriber products or services.

[0019] The implementation and operations described above are ascribed to the use of the server; however, alternative implementations may execute certain operations in conjunction with or wholly within a different element or component of the system(s). Further, the techniques described herein may be implemented in a number of contexts, and several example implementations and contexts are provided with reference to the following figures. In addition, the term "techniques," as used herein, may refer to system(s), method(s), computer-readable instruction(s), module(s)m algorithms, hardware logic, and/or operation(s) as permitted by the context described above and throughout the document.

Example Network Server Environment

[0020] FIG. **1** illustrates a schematic view of a network server environment **100** that facilitates an automated distribution of gratuities and competition awards among employees of subscriber-establishments (or subscribers) such as restaurants, carwash services, online or offline delivery providers, golf caddy operators, disc jockey services, babysitter services, or similar employers or establishments that can provide sharing of pooled gratuities among their employees or workers. In one embodiment, a network server, which can represent a subscription service provider, may receive input data from a subscriber, process the input data, generate output data that can indicate how gratuities including the competition awards are to be distributed, and transmit the output data back to the subscriber and/or other entities. The network server may also store, integrate, and/or reconcile output data that can include apportioned gratuities and competition awards of employees who may be working for different subscribers. This technique of automating the distribution and/or reconciliation of the gratuities and the competition awards may improve efficiency in business accounting practices on the part of the subscribers and further implement fair sharing among the subscribers' employees, contractors, sub-contractors, and the like.

[0021] In one example, the competitions rewards may include prizes from reaching a particular goal of a defined task competition. The defined task competition may include an identification of the task competition, conditions for qualification, scoring schemes, and a goal to be achieved. The task competition for the restaurant business may include competing for a number of customers served, total amount of a particular liquor sold, number of repeat customers served during a time period or shift, and/or competing for a preconfigured target that can engage or increase participation of the employees. The competition rewards may be funded by the subscriber, an outside entity or a different subscriber, or a distributor that owns the products or services to be rendered through the subscriber. In one embodiment,

an activity or event during distribution of regular gratuities may trigger the calculation of the competition rewards to update task competition ranking and/or competition status of each participant. The competition status, for example, may include participant ranking, updated score, goal to be achieved, and the like. The events and activities during the distribution of the (regular) gratuities is described in a commonly assigned U.S. patent application Ser. No. 17/723,108, entitled "Automated Distribution of Gratuities," the subject matter of which is incorporated herein by reference.

[0022] As shown, the network environment **100** may include a point-of-sale device (POS) **110** of a particular subscriber (e.g., an operator of one or more restaurants), a user **112** such as a store manager, user devices **120(1)**, **120(2)** that are associated with employees **130(1)**, **130(2)**, respectively, one or more entities **140**, a network server such as an accounting management server **150**, and one or more networks **158**. The accounting management server **150** may further include a competition management app **152** and an account database **154**. In some embodiments, the network environment **100** may be or include a cellular network.

[0023] Referencing the user device **120(2)**, and at a first instant **160**, the employee **130(2)** may view on the user device's user interface one or more of employee's employer names **162** such as a bar restaurant **164**, carwash **166**, and Mex bistro **168**. A button link to history data **170** may also be shown at the first instant **160**. At a second instant **180**, and upon clicking/opening further details of the Mex bistro **168** by clicking the adjacent "Details" button, the employee **130(2)** can also view a competition notification **182**, which can include, for example, task competitions **184(1)-184**(N) and corresponding status **186(1)-186**(N). The task competitions **184(1)-184**(N) may include corresponding goals to be achieved to win the competition awards. The status **186(1)-186**(N) may indicate employees ranking towards the goal to be achieved, stage of the competition such as halfway or near the end of the goal, amount of award, earned competition awards by the employee from previous competition, scoring schemes for the competition, algorithm used, and the like.

[0024] The account database **154** may store the information of the subscribers, preconfigured competitions, or templates of competitions of the corresponding subscribers, details and parameters of the task competitions, algorithms used for calculating the competition awards, and the like. As shown, the number of blocks, information, employees, and associated user devices are for illustration purposes only, and additional POSs, employees, and user devices can be included within the scope of the embodiments described herein.

[0025] The user **112** and employees **130(1)**, **130(2)** may include individuals who are working in a restaurant for illustration purposes. In one embodiment, the user **112** may be a store manager who can configure, via the POS **110** and/or by accessing the accounting management server **150**, the apportioning of the regular gratuities among the employees over a gratuity distribution period, which can include a periodic cycle, aperiodic distribution frequency of the gratuities, or a combination thereof. For example, the periodic cycle may be every hour, end of day, end of week, or some other fixed time period. The aperiodic cycle can be after winning a task competition, rendering of a particular service or completion of a customer order at the time-of-sale, random clocking in and out by an employee based upon a need of the subscriber, happening of an event during an employee's shift, winning of the task competition, or other aperiodic arbitrary condition that can be associated with the calculation of the pooled regular gratuity or rewarding of the sponsored gratuity.

[0026] In some embodiments, the configuring by the user **112** (store manager) may include entering the employee's personal information, assigned job code, job position, percentage sharing (over regular gratuity) for the job position or type of service, and adjustment in the percentage sharing (over the regular gratuity) at a certain day of the week or upon the occurrence of a condition. Further, the configuring by the store manager may include defining and/or setting parameters for the different task competitions **184(1)-184**(N). The parameters may include identifications of the task competitions, qualifications to join each of the task competitions, input data that are representative of components of the task competitions, and scoring metrics. The qualification, for example, may include being a full-time employee, night-shift employee, assigned to a particular position, and the like. The input data or the components of the task competition may include, for example, the number of products or targeted menu sold, the number of customers serviced, the number of tips over a particular period, and the like.

[0027] In one example, the scoring metrics may include scoring rules to rank or facilitate identification of the winners of the task competition **184(1)-184**(N). The scoring metrics may use set values, threshold values, preconfigured weights for different components of the task competition, or a combination thereof. The set values or threshold values may include a preconfigured number or amount that can be used as a reference to determine the winner of the task competition. For example, the set value may include "5 items" as a target for menus sold in a particular shift. In another example, the threshold value may include a minimum amount of "$100" customer tip to win the task competition. The preconfigured weights may include coefficients or assigned values to calculate an average value. For example, equal preconfigured weights are given to the number of products sold and the total number of customers served for the particular shift. In this example, the preconfigured weights of these components may be used in calculating the average value or updated score of the task competition participant.

[0028] The POS **110** and/or the user devices **120(1)**, **120(2)** may include an electronic communication device, including but not limited to, a smartphone, a session initiation protocol (SIP) phone, a laptop, a personal digital assistant (PDA), a satellite radio, a global positioning system (GPS), a multimedia device, a video device, a camera, a game console, a tablet, a smart device, a wearable device, or any other similar functioning device. In one embodiment, the POS **110**, and/or the user devices **120(1)**, **120(2)** may communicate with the accounting management server **150** to avail of automated distribution and/or reconciliation of gratuities and the competition awards. Further, the POS **110**, and/or the user devices **120(1)**, **120(2)** may be used to enter input data or input variables for the scoring metrics as described herein.

[0029] A network server such as the accounting management server **150** may utilize distributed computing resources (e.g., one or more computing devices) that can operate in a cluster or other configuration to share resources, balance

load, increase performance, provide fail-over support or redundancy, or for other purposes. The accounting management server **150** may include one or more interfaces to enable communications with the POS **110**, user devices **120**, and other networked devices via the one or more network(s) **158**. The one or more network(s) **158** may include public networks such as the Internet, private networks such as an institutional and/or personal intranet, or some combination of private and public networks. The one or more network(s) **158** can also include any type of wired and/or wireless network, including but not limited to local area network (LANs), wide area networks (WANs), satellite networks, cable networks, Wi-Fi networks, Wi-Max networks, mobile communications networks (e.g., 3G, 4G, and so forth), or any combination thereof.

[0030] The one or more entities **140** may include another server or servers that can be operated by financial institutions, payroll agencies, tax agencies, bankruptcy court, credit card companies, collection agencies, payday loan lenders, creditors, or other institution that can process output data from the accounting management server **150**. In one embodiment, the one or more entities **140** may implement access policies to control access by the subscribers to their corresponding output data or other subscriber information/data for further processing. The subscriber information/data may include the name of the subscriber, its (or its user) status and limit of authorization, etc.

[0031] In an example operation, the user **112** (store manager) may preconfigure the parameters of each of the restaurant task competitions **184**(**1**)-**184**(N) including an identification of the task competition, input data or components for each task competition, identification of authorized devices that can supply the input data, and scoring metrics that can be used to determine the ranking or the winning participant. In this example operation, the determining of the winning participant may be executed continuously, periodically, or upon a detection of a triggering event such as a closing of a transaction at the time-of-sale.

[0032] In one embodiment, the competition management app **152** may continuously generate output data to update the task competition participants on their respective scores and ranking in the task competitions. Each of the status **186**(**1**)-**186**(N) may indicate the status and/or competition updates over corresponding task competitions **184**(**1**)-**184**(N). Similarly, the competition management app **152** may allow the user **112** to enter new task competitions, components of the task competitions, adjustments in the scoring metrics, and the like, via the POS **110** or other user devices that are authorized to access the competition management app **152**.

[0033] With the calculated gratuity earnings and competition awards at the end of the gratuity distribution period, the gratuity earnings and the competition awards may be stored in the account database **154** where the stored data can be accessed by the user devices **120**, the subscriber POS **110**, one or more entities **140**, and/or other network devices. In some cases, authorization from the user **112** or subscriber may be needed for the other network devices to access the subscriber's or employee's data.

[0034] For example, the user device **120**(**2**) that is associated with the employee **130**(**2**) may be authorized to access the stored data to check the competition notification **182** that includes the task competitions **184**(**1**)-**184**(N) and corresponding status **186**(**1**)-**186**(N). As shown at the first instant **160**, the employee **130**(**2**) can view at a user interface a different employer, if the employee holds more than one job whose employer also subscribes to the service that provides the automated distribution of gratuities. The employee **130**(**2**) may then view additional details of the task competitions participated in by the employee as shown at the second instant **180**. Here, the employee can view the updated competition notification for the Mexican bistro where the competition notification may serve as the task performance indicator feedback in the illustrated example. In one embodiment, and every pay period, a particular entity such as an employee's bank may process the data from the accounting management server **150** to facilitate the direct deposit of the employee's earned earnings to the employee's bank account. In another embodiment, another entity such as a collecting agency may process the data from the accounting management server **150** to garnish the employee's earned earnings for child support, and so on.

[0035] The history data **170** may store competitions participated in by the employee, identification of task competition won or lost, previous competition notifications, and data associated with the participation of the employee on the task competitions. In one embodiment, the data may be used in a statistical algorithm to calculate chances of the associated employee to win the task competition. For example, the employee **130**(**2**) won the last 1st competition **184**(**1**), which is based on the number of customers served. In this example, the corresponding status **186**(**1**) for this task competition may indicate statistical chances of the employee **130**(**2**) to win the 1st competition **184**(**1**). Here, the employee **130**(**2**) may focus on the 1st competition **184**(**1**) versus the other task competitions **184**(**2**)-**184**(N) in order to get the associated competition award.

Example Network Server Implementation in a Network Server Environment

[0036] FIG. **2** is a diagram of an example network server environment **200** in which an accounting management server may be implemented, in accordance with at least one embodiment. For example, the network server environment **200** may include a network server **202** that corresponds to the accounting management server **150** of FIG. **1**. The network server **202** may be communicatively connected, via a network **240**, to a POS **250** and a user device **260**. The POS **250** and the user device **260** may correspond to the POS **110** and the user device **120**, respectively, of FIG. **1**.

[0037] The network server **202** may include one or more processors **204** having electronic circuitry that executes instruction code segments by performing basic arithmetic, logical, control, memory, and input/output (I/O) operations specified by the instruction code. The processors **204** can be a product that is commercially available through companies such as Intel® or AMD®, or customized to work with and control a particular system.

[0038] The network server **202** also includes a communications interface **206** and miscellaneous hardware **208**. The communication interface **206** may communicate with components located outside the network server **202** and provide networking capabilities for the network server **202**. For example, the network server **202**, by way of the communications interface **206**, may communicate with subscribers and one or more entities that can be authorized by the subscribers to use the subscriber data. The subscriber data may include regular gratuities and/or task competition rewards that can be distributed at each gratuity distribution

period, pay period, or preconfigured period for the distribution of the task competition rewards. The subscriber data may also include associated subscriber information such as, without limitation, employee job codes, positions, hours of work, etc. Further, the subscriber data may include parameters of the task competitions, task notification that may be representative of the task performance indicator feedback, and other information associated with the goals of each task competition. Communications between the network server **202** and the user devices or requestor devices may utilize any sort of communication protocol known in the art for sending and receiving data and/or voice communications.

[0039] The miscellaneous hardware **208** may include hardware components and associated software and/or firmware used to carry out device operations. Included in the miscellaneous hardware **208** may be one or more user interface hardware components not shown individually—such as a keyboard, a mouse, a display, a microphone, a camera, and/or the like—that support user interaction with the network server **202**.

[0040] The network server **202** also includes memory **210** that stores data, executable instructions, modules, components, data structures, etc. The memory **210** may be implemented using computer-readable media. Computer-readable media includes, at least, two types of computer-readable media, namely computer-readable storage media and communications media. Computer-readable storage media includes, but is not limited to, Random Access Memory (RAM), Dynamic Random Access Memory (DRAM), Read-Only Memory (ROM), Electrically Erasable Programmable Read-Only Memory (EEPROM), flash memory or other memory technology, Compact Disc-Read-Only Memory (CD-ROM), digital versatile disks (DVD), high-definition multimedia/data storage disks, or other optical storage, magnetic cassettes, magnetic tape, magnetic disk storage or other magnetic storage devices, or any other non-transmission medium that can be used to store information for access by a computing device. As defined herein, computer-readable storage media do not consist of and are not formed exclusively by, modulated data signals, such as a carrier wave. In contrast, communication media may embody computer-readable instructions, data structures, program modules, or other data in a modulated data signal, such as a carrier wave, or other transmission mechanisms.

[0041] An operating system **212** may be stored in the memory **210** of the network server **202**. The operating system **212** can control a functionality of the processor(s) **204**, the communications interface **206**, the miscellaneous hardware **208**, and couples the processor(s) **204** with the memory **210**. Furthermore, the operating system **212** may include components that enable the network server **202** to receive and/or transmit data via various inputs (e.g., user controls, network interfaces, and/or memory devices), as well as process data using the processor(s) **204** to generate output. The operating system **212** can include a presentation component that controls presentation of output (e.g., display the data on an electronic display, store the data in memory, transmit the data to another electronic device, etc.). Additionally, the operating system **212** can include other components that perform various additional functions generally associated with a typical operating system. The memory **210** that is in communication with the processor(s) **204** also stores various software applications **214**, or programs, that provide or support functionality for the network server **202**, or provide a general or specialized device user function that may or may not be related to the example computing device per se.

[0042] The one or more processors **204** and the memory **210** may implement a competition management platform **216** that may correspond at least in part to the competition management app **152** of FIG. **1**, including such software as routines, program instructions, objects, and/or data structures that are executed by the processors **204** to perform particular tasks or implement particular abstract data types. The one or more processors **204** in conjunction with the competition management platform **216** may further operate and utilize a service request processor **218**, a competition engine **220**, and a competition management database **230** including an algorithm database **232**, a subscriber database **234**, and a competition parameter database **236**. The subscriber database **234** may correspond at least in part to the account database **154** of FIG. **1**.

[0043] The competition management platform **216**, when executed, may manage the automated distribution and/or reconciliation of the gratuities including the awarding of task competition prizes among subscriber employees over one or more gratuity distribution periods. The competition management platform **216** may run, for example, one or more algorithms and/or sub-algorithms to generate output data that may include gratuity earnings and competition awards for each of the employees over the one or more gratuity distribution periods. The gratuity earning may include the regular gratuities. In some embodiments, the competition awards may be a form of sponsored gratuities when treated to be the same type of income as that of the gratuity income. For example, the competition awards and the regular gratuities are combined directly with the base wage of the employee. The competition management platform **216** may be a single block of executable instructions or it may be made up of several components. The components included in at least one implementation are described elsewhere herein. However, it is noted that in some implementations, more or fewer components may be configured and that one or more operations attributed to a particular component in the following description may be implemented in one or more other components.

[0044] The service request processor **218** may process one or more service requests that can be received from the POS **250** or user devices that are associated with the subscriber's employees. One functionality of the service request processor **218** may be to verify the source of the service request. For example, the service request processor **218** may parse the parameters of the received service request and use the parsed parameters, such as an identification of the user device **260**, to verify whether the device identification is associated with a particular subscription. In this example, the subscriber may authorize during an initial sign-up or during a period of subscription to the competition management platform **216** the user device or devices, POSs, and/or entities that can access subscriber data or employee data. Access to the subscriber data or employee data may be performed via the use of a username, email address, job code, and/or the like.

[0045] The competition engine **220** may be configured to run a first set of algorithms associated with defined task competitions to distribute the task competition rewards over one or more gratuity distribution periods for each of the subscriber establishments. In one embodiment, the compe-

tition engine **220** may also a second set of algorithms to calculate the gratuities to be apportioned for different time windows within a particular gratuity distribution period. In at least one embodiment, the first set or second set of algorithms may be executed continuously, periodically, or upon the detection of a triggering event. In this embodiment, the first set of algorithms may use different input data from that of the second set of algorithms. For example, the first set of algorithms may use parameters of the task competition while the second set of algorithms can utilize the preconfigured conditions for the distribution of the regular gratuity such as type of assignment, status of employment whether full-time or part-time employee, etc.

[0046] The algorithm database **232** may store preconfigured algorithms and/or sub-algorithms, associated input variables, and other information that can be used for distributing rewards over different competitions such as the task competitions **184**(**1**)-**184**(N) of FIG. **1**. In one embodiment, the subscriber may preconfigure the conditions that can trigger the running of the algorithms or sub-algorithms, input variables to be utilized based upon the parameters of the defined task competitions, and the storing of the output data in the subscriber database **234**.

[0047] In one embodiment, the parameters of the task competition may include an identification of the task competitions and associated components of the identified task competition. For example, the components of the restaurant task competition may include competing for a number of customers served over a particular shift or hour, the total amount of a particular liquor sold, the number of repeat customers served, the number of target menus offered or sold, and the like. In this example, different scoring metrics may be preconfigured for each task competition and/or component of the task competition to determine the winner. The different scoring metrics may use a set value, threshold value, preconfigured weight of the components, or a combination thereof, as a reference to rank or classify the winning employee among the task competition participants. An example specification of the task competition is further described in detail in FIG. **3** below.

[0048] The subscriber database **234** may store the information associated with the subscriber establishments, such as the name of the establishment, nature of the establishment, employee information, gratuity distribution periods observed by the subscribers for their employees, competition rewards distribution periods, authorized subscriber personnel who can configure the specification of the task competition and/or percentage sharing of the employees, different sources of gratuities within the subscriber establishment, and the like. In one example, the employee information may include personal information, the device identification associated with the employee, employee position, and the like.

[0049] The competition parameter database **236** may store defined task competitions including preconfigured input variables or components, scoring metrics, parameters of the task competition, and associated algorithm(s) for calculating the scores of the task competition participants. In one embodiment, the competition management platform **216** may use the stored data in the competition parameter database **236** to generate the competition notification such as the competition notification **182** of FIG. **1**. Here, the competition notification may include the task competition and corresponding competition updates that can be displayed in the POS **250** and/or the user device **260**. In this embodiment, the algorithm(s) may be executed continuously, periodically, or upon the detection of the triggering event.

[0050] In one embodiment, the POS **250** may be associated with a particular subscriber establishment and includes components such as a competition management app **252** and a competition parameter database **254**. In this embodiment, the POS **250** may be used to periodically or in real-time send events or activities to the network server **202** for further processing. The events may include, without limitation, sales entries, amounts of regular gratuities, a timestamp for payment of the regular gratuities, a timestamp for opening a transaction such as entering a tab number for a customer or designating a dining table for the customer, timestamp for ending of rendering service to customers or completing an order such as entering bill payment or closing of the tab number, clocking in and out by employees, changes in gratuity distribution period, assigned percentage sharing of the regular gratuity for a certain position, or adjustments in percentage sharing of the employee. The events may further include conditions and details for winning the task competitions and other data that relate to the distribution of the competition awards over one or more gratuity distribution periods.

[0051] The user device **260** may be the employee's electronic device that can be used to access the employee's earnings from one or more employers and/or view the task competition notification including the updated scores, ranking in the task competitions, amount left to reach the goal, parameters of the goal, amount of awards, and the like. In one example, the user device **260** may utilize the competition management app **262** to access the network server **202** and transmit events that can be used as triggering events. For example, a Wi-Fi connection between the user device **260** and the POS **250** may indicate clocking in by the employee upon the employee's physical arrival at the location of the subscriber establishment. The user device **260** may also include the competition parameter database **264** to store the defined task competitions and the associated parameters or specification of the defined task competitions.

Example LUT for Distributing Sponsored Gratuities

[0052] FIG. **3** is a block diagram of an example data structure **300** that can be used by the competition management platform **216** to identify parameters of the defined task competitions and apportion the rewards from the task competition prizes. In one embodiment, the data structure **300** may be a look-up table (LUT) that can be preconfigured to determine the one or more winning employees in the one or more task competitions. In this embodiment, the LUT may be stored in the competition parameter database such as the competition parameter database **236** of FIG. **2**.

[0053] As shown, the data structure **300** may include task competitions **310**, input data **320**, scoring metrics **330**, and associated sub-algorithms **340**. The task competitions **310** can be representative of an undertaking to achieve a defined goal that is to be performed by the one or more employees. For example, in a restaurant business, the task competitions **310** may include selling liquors competition **312** and earning tips competition **314**. In this example, the selling liquors **312** may involve a competition or desired goal of disposing of liquors to customers while the earning tips competition **314** may include a competition or desired goal of gathering regular gratuities over a particular time period. For illustra-

tion purposes, only two task competitions **310** are shown and different other task competitions (e.g., car valeting, selling a number of targeted menus, etc.) can be included without affecting the embodiments herein. Further, only two components or input data for each task competition is shown and additional components may be preconfigured without affecting the embodiments herein.

[0054] The input data **320** (or input variables) may include preconfigured arbitrary components of the corresponding task (or task competition). For example, the input data **320** or components for the selling liquors competition **312** may include a size of liquor **322** and a brand of liquor **324**. In this example, the restaurant may be promoting a particular size and brand of liquor and in this regard, the components for the task—selling liquors competition **312** may be based upon the sizes and brand of the liquors to be sold over a particular time period.

[0055] In another example, the input data **320** for the earning tips competition **314** may include amount of tips **326** and number of customers **328**. In this example, the restaurant may be focusing on engaging the employees to improve their customer service skills and on this regard, the components of the earning tips competition **314** may be based on the amount of tips and number of customers served by the competing employee over a particular time period such as one hour, two hours, end of shift, and the like.

[0056] The scoring metrics **330** (or scoring rule) may include a preconfigured scoring rule that can be used to rank or measure the performance of the task competition participants on each of the task competitions **310**. In one embodiment, the scoring metrics **330** may use a set value, threshold value, different preconfigured weight for each of the components (input data), or a combination thereof. For example, the scoring metrics **330** for the size of liquor **322** and brand of liquor **324** (i.e., components of the selling liquors competition **312**) may include a preconfigured 40% weight **332** and 60% weight **334**, respectively. In this example, a first sub-algorithm **342** may utilize these preconfigured weights to measure the corresponding scores of each of the task competition participants. The first sub-algorithm **342** may use the size of liquor **322** and the brand of liquor **324** as independent variables to rank or update the scores of the competing employees.

[0057] In another example, the scoring metrics **330** for the amount of tips **326** and number of customers **328** (i.e., components of the earning tips competition **314**) may include a preconfigured 50% weight **336** and 50% weight **338**, respectively. In this example, a second sub-algorithm **344** may utilize these preconfigured weights to measure the corresponding scores of the task competition participants. The second sub-algorithm **344** may use the amount of tips **326** and the number of customers **328** served as independent variables in ranking or updating the scores of the competing employees.

[0058] In some embodiments, one or more task competitions **310** may be combined to determine the winner for the task competition. Here, different scoring metrics **330** may be utilized to measure the performance of the competing employees. For example, the selling liquors competition **312** and the earning tips competition **314** may be combined as a single task competition. In this example, the components of these task competitions **310** may be combined and used in an algorithm to calculate the scores of the task competition participants. Here, the preconfigured weights for the size of liquor **322**, a brand of liquor **324**, amount of tips **326**, and number of customers **328** total 100% weight.

Example Subscriber User Interface

[0059] FIG. **4** is an example subscriber user interface that shows accessing the competition management app to manually configure various fields, parameters, and conditions that may effect changes in input data and scoring metrics for the task competitions, in accordance with at least one embodiment. As shown, the subscriber user interface may include fields for entry of parameters, e.g., by a subscriber/user, to enforce a task competition policy. In the illustrated example, those fields may include entries for a task code **400**, a distribution weight **410**, scoring metrics **420** for the task code **400**, and input data **430**. The task code **400** may be representative of the task competitions such as the task competitions **184**(**1**)-**184**(N) of FIG. **1**. Different task competitions may correspond to a different task code **400**. The input data **430** may include the components of the task code **400** to be preconfigured or manually adjusted as shown.

[0060] In the example shown in FIG. **4**, which is not limited to the fields or values shown, the task code **400** may represent a combined selling liquors and earning tips competitions such as the selling liquors competition **312** and earning tips competition **314** of FIG. **3**. Here, the components (input data **430**) of the task code **400** may include a size of liquor **432**, brand of liquor **434**, amount of tips **436**, and number of customers **438**, which correspond to the size of liquor **322**, brand of liquor **324**, amount of tips **326**, and number of customers **328** of FIG. **3**. In one embodiment, the input data **430** may be assigned with corresponding distribution weight **410** to generate the corresponding scoring metrics **420**. In this embodiment, each of the input data **430** may be used as an input variable in an algorithm or sub-algorithm to rank or update the scores of the task competition participants.

[0061] As illustrated, the subscriber (e.g., manager, supervisor, data entry clerk, or the like) may select one or more input data **430** and enter values for the distribution weight **410** for each of the selected input data via the POS user interface to adjust on the fly the scoring metrics **420** associated with each input data. The task code **400**, input data **430**, and corresponding scoring metrics **420** may be preconfigured and stored in the competition parameter database such as the competition parameter database **236** of FIG. **2**.

[0062] In one example, adjustments to the distribution weights and other parameters that are tied to distribution amounts may be forwarded to the network server, and the network server may adjust the data structure that can be associated with the task codes. In this example, the network server may perform automated adjustment of the task competition specification on behalf of the subscriber as described herein.

[0063] The input data **430** as shown includes the components as described in FIG. **3** above to simplify the illustration. However, different other input data may be adjusted or preconfigured such as qualifications to participate in the task competition, identification of items in the targeted menus, amount or measurement for each targeted item, and the like.

Example Employee's User Device

[0064] FIG. **5** is an example user interface of the first employee's user device **120**(**1**) that shows accessing the

competition management app to view the competition notification on one or more task competitions participated in by the employee. The competition notification such as the competition notification **182** of FIG. **1** may provide the task performance indicator feedback that can be used by the employee as a reference in determining current status towards a particular goal. In the illustrated example, the user interface may show task competitions **500**, updated score **510**, updated ranking **520**, and reward amount **530**. The task competitions **500** may correspond to the task competitions **310** of FIG. **3** and can include restaurant task contests that the employee is participating in. Each of these task competitions may be implemented to promote one or more products or to engage the employees to enhance the services that are being offered by their employer. The task competitions **500** may include the task competitions from different employers that can respectively sponsor the prizes to be apportioned to the task competition participants.

[0065] For example, the task competitions **500** may include a first competition **502**, second competition **504**, third competition **506**, and a fourth competition **508**. Each of these tasks may be associated with one or more input data or components (not shown) that can be used in the one or more corresponding sub-algorithms to determine the scores of the task competition participants. For example, the first competition **502** may include the selling of liquors and the input variables may include sizes and/or brands of the liquor sold. In another example, the second competition **504** may include gathering of tips and the input variables may include amount of tips and number of customers served by the task competition participant. In another example, the third competition **506** may include selling targeted restaurant menus and the input variables may include identification and amount served by the task competition participant. In another example, the fourth competition **508** may include serving repeat customers and the input variables may include day of the week and the type of menu served by the task competition participant, and so on.

[0066] For each of the task competitions **500**, a corresponding updated score **510** may be calculated continuously, periodically, or upon detection of a triggering event. For example, and upon detection of the triggering event, the updated core **510** for the first competition **502**, second competition **504**, third competition **506**, and a fourth competition **508** may include "89 points" **512**, "77 points" **514**, "98 points" **516**, and "48 points" **518**, respectively. Further, a corresponding updated ranking **520** may be determined by comparing the updated scores of the task competition participants with a set value or threshold value. For example, the task competition participant associated with the user device **120**(**1**) has a ranking of "2^{nd} ranking" **522**, "3^{rd} ranking" **524**, "1^{st} ranking" **526**, and "10^{th} ranking" **528** upon calculation of the updated scores for the first competition **502**, second competition **504**, third competition **506**, and a fourth competition **508**, respectively. Here, the task competition participant may be motivated to exert more effort for the fourth competition **508** to earn a higher reward amount **530**. For illustration purposes, the reward amount **530** for the first competition **502**, second competition **504**, third competition **506**, and a fourth competition **508** includes "$100" **532**, "$500" **534**, "$300" **536**, and "$900" **538**, respectively.

[0067] In some embodiments, the competition notification in user's device may include real-time notification alert (not shown) that the participant moved to a higher level or rank, time left to complete the goal of the task competition, stage of the participant in achieving the goal of the task competition, level of difficulty of the task competition, statistical chances of the participant to win the task competition, statistical chances of increasing scores based on the current position of the employee for the day, and the like.

Example Implementation of Reconciling Regular Gratuities

[0068] FIG. **6** is diagram illustrating an example apportionment of the regular gratuity at the end of the gratuity period. In one embodiment, as further described below, the gratuity period may be defined by a time-of-sale. In this embodiment, the event or activity during the apportionment of the regular gratuity may be used as a triggering event for the distribution of the competition rewards as described herein. For example, the time-of-sale may trigger the running of the sub-algorithms **340** of FIG. **3** to update the competition notifications that can be transmitted in real-time to the participants of the task competitions.

[0069] FIG. **6** shows an example of (regular) gratuity distribution over completed orders that span/range from an opening of the corresponding order/transaction to an entry of a time-of-sale for each of the orders/transactions. The entry of the time-of-sale may indicate the completion of the corresponding transaction such as when actual payment is made for the service rendered or completion of a customer's order (e.g., payment of a bar tab bill). FIG. **6** illustrates a reconciliation of pooled regular gratuity upon the entry of the time-of-sale, which can define an end of the corresponding aperiodic gratuity distribution period for the rendered service or completed order. As shown, a first host **610** and a second host **620** may represent subscriber employees while a first time-of-sale **630** and a second time-of-sale **640** can represent entries of a first check **650** and a second check **660**, respectively. The first check **650**, for example, may include payment of a bar tab that was opened by a first customer (not shown) at 9:00 PM and closed at 12:58 AM while the second check **660** can include another payment for a separate bar tab that was opened by a second customer (not shown) at 11:00 PM and closed at 1:50 AM. The opening of the bar tab may include an entry of a bar number (not shown) that can be assigned or associated with a particular customer while the closing of the bar tab may include an entry of payment or other information that can indicate a completion of transaction. FIG. **6** further shows a first gratuity reconciliation **670** and a second gratuity reconciliation **680** that can represent apportioning of the pooled regular gratuities at the time of the first time-of-sale **630** and the second time-of-sale **640**, respectively.

[0070] Referencing the first gratuity reconciliation **670**, A**1** **672** and B**1** **674** may represent respective percentage sharing of the first host **610** and the second host **620** at a first time window X**1** **692**. Further, A**2** **676** and B**2** **678** may represent respective percentage sharing of the first host **610** and the second host **620** at a second time window X**2** **694**. In FIG. **6**, the respective percentage sharing, first time window X**1** **692**, and the second time window X**2** **694** are illustrated for purposes of apportioning the regular gratuities.

[0071] Referencing the second gratuity reconciliation **680**, A**1** **682** and B**1** **684** may represent respective percentage sharing of the first host **610** and the second host **620** at a third time window X**3** **696**. Further, A**2** **686** and B**2** **688** may

represent respective percentage sharing of first host **610** and the second host **620** at a fourth time window X**4** **698**. In FIG. **6**, the respective percentage sharing, third time window X**3** **696**, and the fourth time window X**4** **698** are illustrated for purposes of apportioning the regular gratuities.

[0072] In one embodiment, the first time-of-sale **630** may define an end of an aperiodic gratuity distribution period and can be associated with a completion of a transaction that is paid using the first check **650**. For example, the transaction was opened at 9:00 PM and closed at 12:58 AM upon an entry of transaction payment, which is represented by the first time-of-sale **630**. In this example, the pooled gratuity ($10) may be immediately apportioned to the first host **610** and the second host **620** upon completion of the transaction. The reconciliation of the pooled regular gratuity ($10) at the first time-of-sale **630** may utilize sub-algorithm or sub-algorithms for apportioning the regular gratuities.

[0073] For example, referencing the first gratuity reconciliation **670**, the first time window X**1** **692** and the second time window **694** may correspond to different percentage sharing by the first host **610** and the second host **620** over different time periods within the aperiodic gratuity distribution period of 3 hours and 58 minutes (i.e., 9:00 PM to 12:58 AM). At the first time window X**1** **692**, note that even though there is no overlapping between working shift/hours by the second host **620** (11:00 PM to 2:00 AM) with the first host **610** (9:00 PM to 11:00 PM), one or more arbitrary conditions other the overlapping of working hours may be associated with the percentage sharing—B**1** **674** of second host **620**. For example, the second host **620** is preconfigured to share 10% of a portion of the tips—gratuity during the first time window X**1** **692** on account of the second host's position even though the second host did not work between 9:00 PM to 11:00 PM.

[0074] Referencing the second time window X**2** **694** of the first gratuity reconciliation **670**, the second time window X**2** **694** may be triggered by changes in the percentage sharing of the first host **610** and the second host **620** upon an occurrence of a condition such as the clocking in by the second host **620** at 11:00 PM. Here, a different sub-algorithm may be utilized to calculate the respective percentage sharing of the first host **610** and the second host **620** of the portion of the tip-gratuity at the second time window X**2** **694**. In some instances, the percentage sharing of the first host **610** and the second host **620** at the first time-of-sale **630** may be linearly based upon a number of minutes they served or provided for the completion of the transaction. In these instances, the first host **610** and the second host **620** may divide the $10 pooled tip-gratuity based upon their number of work hours such as 2 hours (9:00 PM to 11:00 PM) for the first host **610** and 1 hour 58 minutes (11:00 PM to 12:58 AM) for the second host **620**.

[0075] In one embodiment, the amount of gratuity to be pooled ($10) at the first time-of-sale **630** may be equated with a summation of the sub-algorithms over the first time window X**1** **692** and second time window X**2** **694** to calculate the apportioned tip-gratuities for the first host **610** and the second host **620**. In this embodiment, the percentage sharing of the first host **610** is a function of the percentage sharing of the second host **620** and as such, the percentage sharing of each host may be calculated.

[0076] Referencing the second gratuity reconciliation **680**, the second time-of-sale **640** may define an end of another aperiodic gratuity distribution period and can be associated with completion of a transaction that is associated with the second check **660**. For example, the transaction was opened at 11:00 PM and closed at 1:50 AM upon an entry of transaction payment, which is represented by the second time-of-sale **640**. In this example, the pooled tip-gratuity ($20) may be immediately apportioned to the first host **610** and the second host **620** upon completion of the transaction. The reconciliation of the pooled tip-gratuity ($20) at the second time-of-sale **640** may similarly utilize sub-algorithm or sub-algorithms for apportioning regular gratuities.

[0077] For example, referencing the second gratuity reconciliation **680**, the third time window X**3** **696** and the fourth time window **698** may correspond to different percentage sharing by the first host **610** and the second host **620** over different time periods within the aperiodic gratuity distribution period of 2 hours and 50 minutes (11:00 PM to 1:50 AM). At the third time window X**3** **696**, note that even though there is no overlapping between working hours of the second host **620** (11:00 PM to 2:00 AM) with the first host **610** (9:00 PM to 11:00 PM), one or more arbitrary conditions other the overlapping of working hours may be associated with the percentage sharing A**1** **682** of the first host **610**. For example, the first host **610** is preconfigured to have a percentage share of A**1** **682** for the third time window X**3** **696** on account of first host's position even though the first host did not work between 11:00 PM to 1:00 AM. At the fourth time window X**4** **698**, the first host **610** may be preconfigured to have a different percentage share—A**2** **686** on account, for example, of first host's reward as employee of the year even though the first host did not work between 1:00 AM to 1:50 AM. In these examples, the one or more arbitrary preconfigured conditions that can be associated with each host can be programmed by a subscriber administrator such as a store manager. Further, the preconfigured one or more conditions can be preconfigured at different cycles like implementing aperiodic gratuity distribution periods for the first half of the month and observing periodic gratuity distribution periods in the second half.

[0078] Similar to the first gratuity reconciliation **670**, the amount of tip-gratuity to be pooled ($20) at the second time-of-sale **640** may be equated with a summation of the sub-algorithms over the third time window X**3** **696** and fourth time window X**4** **698** to calculate the apportioned gratuities for the first host **610** and the second host **620**. Since the percentage sharing of the first host **610** is a function of the percentage sharing of the second host **620** at each time window, then the percentage sharing of each host may be calculated.

[0079] In one embodiment, the event or activity during the apportionment of the regular gratuities as described above may be used as a triggering event to update competition notifications to be transmitted to the task competition participants. For example, the accounting management server may use the time-of-sale as a triggering event to update the ranking, status, and other information associated with the competition notification such as the competition notification **182** of FIG. **1**. In another example, the accounting management server may use the opening of the tab as the triggering event to update the competition notification **182**, and so on.

Example Implementation— Using Task Competition to Promote Product or Services

[0080] FIG. **7** is a flow diagram of an example process in accordance with at least one embodiment. In the following

discussion of FIG. **7**, continuing reference is made to the elements and reference numerals shown in and described with respect to the network server **202** of FIG. **2**. Further, certain operations may be ascribed to particular system elements shown in previous figures. However, alternative implementations may execute certain operations in conjunction with or wholly within a different element or component of the system(s). Furthermore, to the extent that certain operations are described in a particular order, it is noted that some operations may be implemented in a different order to produce similar results.

[0081] At block **702**, the network server **202** may receive parameters of a task competition. For example, the parameters may include identification of the task competition, preconfigured input data or components of the identified task competition, scoring metrics, preconfigured sub-algorithms, and associated information such as employee ID, job position, and the like. The parameters may define the goals of the task competition and can be configured during the competition creation process as described above with reference to FIG. **4**.

[0082] At block **704**, the network server **202** may receive events that are related to the task competition. For example, the events or activities may include closing of a dinner transaction at the time-of-sale as described herein. In another example, the events or activities may include entering an amount of tip, opening a tab for a customer, registering a car during car valeting, registering a repeat customer, and the like. In these examples, the network server **202** may use the received event or activity as a triggering event for distributing the competition rewards as described herein.

[0083] At block **706**, the network server **202** may update a task competition score or status of each task competition participant based at least in part on the received events and the parameters of the task specification. For example, the competition notification **182** of FIG. **1** may display output data such as raw scores of the participant, ranking of the participant towards the goal of the task competition, amount of time or task left for the goal to be finished or achieved, statistical chance of the participant to achieve the goal, and the like.

[0084] At block **708**, the network server **202** may notify each of the task competition participants of the updated task competition score. For example, a user interface of the user device associated with the task competition participant may display the competition notification **182** including the task competitions, updated scores, updated ranking, and the reward amount as described in FIG. **5** above.

Example Implementation— Adding Task Competition Prizes to Winning Employees

[0085] FIG. **8** is a flow diagram of another example process **800** in accordance with at least one embodiment. In the following discussion of FIG. **8**, continuing reference is made to the elements and reference numerals shown in and described with respect to the network server **202** of FIG. **2**. Further, certain operations may be ascribed to particular system elements shown in previous figures. However, alternative implementations may execute certain operations in conjunction with or wholly within a different element or component of the system(s). Furthermore, to the extent that certain operations are described in a particular order, it is noted that some operations may be implemented in a different order to produce similar results.

[0086] At block **802**, the network server **202** may detect an event that triggers running of one or more sub-algorithms that are associated with a particular task competition. For example, the network server **202** may detect an entry of a time-of-sale in the POS to complete a transaction. In this example, the detected entry of the time-of-sale may trigger the sub-algorithm for calculating the scores and other information in the competition notification that can be transmitted in real-time to the task competition participants.

[0087] At block **804**, the network server **202** may update task competition scores based on the detection of the triggering event. For example, the network server **202** may run the first sub-algorithm **342** of FIG. **3** upon the detection of entry of the amount of tip and/or number of customers at the time-of-sale. In this example, the running of the first sub-algorithm **342** may update the scores of the task competition participant for the selling of liquor competition. In another example, the network server **202** may run a separate algorithm to update the scores of task competition participant over the task competition for selling targeted menus. In this other example, the components for selling targeted menus may include identification of the targeted menu to be sold, quantity of the targeted menu, etc.

[0088] At block **806**, the network server **202** may select a winner based on the updated task competition scores. In one example, the network server **202** may use a set value or a threshold value to determine the winner of the task competition. In another example, the network server **202** may rank the task competition participants on the updated competition scores. In these examples, the ranking, set value, or threshold value can be used as a reference to select or determine the task competition winner.

[0089] At block **808**, the network server **202** may determine a winner based on the updated task competition scores. If a winner is selected or determined ("Yes" at decision block **808**), then, at block **810**, the network server **202** may notify the task competition participant and facilitate adding the task competition prizes to the winning employee's account. However, if no winner is selected ("No" at decision block **808**), then, at block **802**, the network server **202** may continue monitoring the network of the triggering event such as another entry of the time-of-sale to complete a particular transaction.

CONCLUSION

[0090] Although the subject matter has been described in language specific to features and methodological acts, it is to be understood that the subject matter defined in the appended claims is not necessarily limited to the specific features or acts described herein. Rather, the specific features and acts are disclosed as exemplary forms of implementing the claims.

What is claimed is:

1. One or more non-transitory computer-readable storage media storing computer-executable instructions that upon execution cause one or more processors to perform acts comprising:

receiving parameters of a restaurant task competition, wherein the parameters include at least an identification of the restaurant task competition, one or more components associated with the identification of the restaurant task competition, and a scoring metric that

includes a scoring rule on the one or more components to determine a task competition score of a task competition participant;

detecting a triggering event;

updating the task competition score based at least in part on the detected triggering event; and

notifying the task competition participant based at least in part on the updated task competition score.

2. The one or more non-transitory computer-readable storage media of claim **1**, wherein the acts further comprise:

identifying a preconfigured weight of each component; and

using the preconfigured weight of each component in one or more algorithms to update the task competition score.

3. The one or more non-transitory computer-readable storage media of claim **1**, wherein the updated task competition score is compared to a set value or a threshold value to determine a winner of the restaurant task competition.

4. The one or more non-transitory computer-readable storage media of claim **1**, wherein the restaurant task competition includes at least a selling of liquors or an earning of tips from a transaction.

5. The one or more non-transitory computer-readable storage media of claim **4**, wherein the triggering event includes a closing of the transaction at a time-of-sale.

6. The one or more non-transitory computer-readable storage media of claim **1**, wherein the one or more components are preconfigured for different restaurant task competitions.

7. The one or more non-transitory computer-readable storage media of claim **6**, wherein a distribution weight of each component is manually preconfigured by a store manager via accessing of a competition management application.

8. The one or more non-transitory computer-readable storage media of claim **1**, wherein the detecting of the triggering event includes receiving an activity from an apportionment of a regular gratuity.

9. The one or more non-transitory computer-readable media of claim **1**, wherein the notifying includes transmitting the updated task competition score to a mobile device of the task competition participant.

10. A server-implemented system, comprising:

one or more processors;

computer-executable instructions stored in a memory that, if executed by the one or more processors, cause the one or more processors to perform operations comprising:

receiving parameters of a restaurant task competition, wherein the parameters include at least an identification of the restaurant task competition, one or more components associated with the identification of the restaurant task competition, and a scoring metric that includes a scoring rule on the one or more components to determine a task competition score of a task competition participant;

detecting a triggering event;

updating the task competition score based at least in part on the detected triggering event; and

notifying the task competition participant based at least in part on the updated task competition score.

11. The server-implemented system of claim **10**, wherein the operations further comprise:

identifying a preconfigured weight of each component; and

using the preconfigured weight of each component in one or more algorithms to update the task competition score.

12. The server-implemented system of claim **10**, wherein the updated task competition score is compared to a set value or a threshold value to determine a winner for the restaurant task competition.

13. The server-implemented system of claim **10**, wherein the restaurant task competition include at least a selling of liquors or an earning of tips from a transaction.

14. The server-implemented system of claim **13**, wherein the triggering event includes a closing of the transaction at a time-of-sale.

15. The server-implemented system of claim **10**, wherein the one or more components are preconfigured for different restaurant task competitions.

16. The server-implemented system of claim **15**, wherein a distribution weight of each component is manually preconfigured by a store manager via accessing of a competition management application.

17. A computer-implemented method, comprising:

receiving parameters of a restaurant task competition, wherein the parameters include at least an identification of the restaurant task competition and a scoring metric to determine a task competition score for a task competition participant;

detecting a triggering event;

updating the task competition score of the task competition participant based at least in part on the detected triggering event; and

notifying the task competition participant based at least in part on the updated task competition score.

18. The computer-implemented method of claim **17** further comprising:

identifying a preconfigured weight of one or more input variables that are associated with the restaurant task competition; and

using the preconfigured weight of the one or more input variables in one or more algorithms to update the task competition score.

19. The computer-implemented method of claim **18**, wherein the updated task competition score is compared to a set value or threshold value to determine a winner of the restaurant task competition.

20. The computer-implemented method of claim **17**, wherein the detecting of the triggering event includes receiving an activity from an apportionment of a regular gratuity.

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