SYSTEM, METHOD AND COMPUTER PROGRAM FOR CREATION OR COLLECTION OF INFORMATION USING CROWD SOURCING COMBINED WITH TARGETED INCENTIVES

There is disclosed a computer network implemented method and system operable on a platform for managing the completion of a crowd sourcing activity. The crowd sourcing activity includes a plurality of tasks, each task including optionally a plurality of sub-tasks. A method in accordance with an embodiment includes: assigning one or more targeted incentives to completion of one or more particular tasks or sub-tasks; inviting a plurality of participating users to complete one or more particular tasks or sub-tasks based on the targeted incentives; and tracking progress in the completion of the one or more particular tasks or sub-tasks by the participating users. In another embodiment, a system includes a task manager adapted to: assign one or more targeted incentives to completion of one or more particular tasks or sub-tasks; invite a plurality of participating users to complete one or more particular tasks or sub-tasks based on the targeted incentives; and track progress in the completion of the one or more particular tasks or sub-tasks by the participating users.
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CROSS-REFERENCE TO RELATED APPLICATIONS


FIELD OF THE INVENTION

This invention relates generally to platforms for enabling the creation or collection of information based on contribution from multiple entities, whether human beings or computers. This invention relates more specifically to such platforms that are based on, or incorporate, crowd sourcing.

BACKGROUND

Many activities are time intensive, and often involve multiple tasks, undertaken by a plurality of entities, whether individuals or computers (in this disclosure an "entity" or "entities" refers to individuals, computers or both). The plurality of entities may be involved because of the volume of the work involved in the activity, or because in order to complete the activity efficiently, specific tasks involved in the activity are allocated to individuals with characteristics that enable them to complete the tasks more quickly, or in a way that is consistent with qualitative objectives such as accuracy, consistency, compliance with specific standards, protocols or templates, interoperation with systems, or other factors.

Traditionally, the work related to such activities is completed by a group of employees or contractors, or computers controlled by such employees or contractors. However, the cost of completing activities can be reduced by leveraging essentially volunteers or computer controlled by volunteers, and organizing the work of these volunteers or their computers using Internet technologies.

Prior art systems and solutions that have attempted to leverage volunteers via the Internet are generally referred to as "crowd sourcing" solutions. "Crowd sourcing" or "crowdsourcing" is a neologistic compound of "crowd" and "outsourcing", describing the act of taking tasks traditionally performed by an employee or contractor, and outsourcing them to a group of people or community, through an "open call" to a large group of people (a crowd) asking for
contributions. Participants typically do not receive monetary compensation and the environment is typically not competitive.

WIKIPEDIA™, the well known online encyclopaedia, relies in part on voluntary contributions based on a crowd sourcing model, but in fact accuracy is maintained using a relatively large editorial staff. Most of this editorial staff is unpaid, but their participation is motivated by social incentives, and this works acceptably because being a WIKIPEDIA editor confers reputation, which participants value on its own merit, or because this may provide indirect benefits such as recognition as a subject matter expert, which in turn may assist in job searching or career advancement.

The success of WIKIPEDIA resulted in certain companies, such as Brownbook.net™ and Yellowikis™, initiating the collection of business profiles on a crowd sourced basis. These prior art solutions were not successful in securing active participation of locals to keep up with the rate of change in the location data, and also the data collected suffered from a relatively significant degree of inaccuracy. These prior art solutions employed a traditional approach to crowd sourcing, which typically does not involve rewards other than social incentives. Participation was not active, and there was an inherent motivation to falsify information for personal gain. For example, businesses could vandalize their competitors and spammers could create fake profiles and receive additional customers. There was no accountability in the system.

The prior art does not disclose or suggest a methodology or platform that achieves the requirements mentioned above, or more generally, enables efficient completion of activities, or tasks that are part of activities, based on a crowd sourcing model.

**SUMMARY**

In an aspect, the present disclosure relates to a computer network implemented method operable on a platform for managing the completion of a crowd sourcing activity. The crowd sourcing activity including a plurality of tasks, each task including optionally a plurality of sub-tasks. A method in accordance with an embodiment is characterized in that the method comprises: assigning one or more targeted incentives to completion of one or more particular tasks or sub-tasks; inviting a plurality of participating users to complete one or more particular tasks or sub-tasks based on the targeted incentives; and tracking progress in the completion of the one or more particular tasks or sub-tasks by the participating users.
In another aspect, the present disclosure relates to a computer network implemented system embodied in platform for managing the completion of a crowd sourcing activity. The system is characterized in that the system comprises a task manager adapted to: assign one or more targeted incentives to completion of one or more particular tasks or sub-tasks; invite a plurality of participating users to complete one or more particular tasks or sub-tasks based on the targeted incentives; and track progress in the completion of the one or more particular tasks or sub-tasks by the participating users.

Based on the current state of progress, the method and system is operable to dynamically alter the incentives to completion of the one or more particular tasks or sub-tasks to improve performance of the participating users and completion of the crowd sourcing activity, or the plurality of tasks or sub-tasks.

The method and system may further comprise establishing a user profile for each of the participating users, and updating the user profile with rewards, shares or penalties corresponding to the incentives to completion of the one or more particular associated tasks or sub-tasks, or to a record comprising one or more fields corresponding to particular associated tasks or sub-tasks.

In this respect, before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and to the arrangements of the components set forth in the following description or illustrated in the drawings. The invention is capable of other embodiments and of being practiced and carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

**DESCRIPTION OF THE DRAWINGS**

The invention will be better understood and objects of the invention will become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

Fig. 1 is a system diagram illustrating the components of the present invention, in one representative implementation thereof.
Fig. 2 is a further system diagram illustrating the system of present invention, in another representative implementation that includes at least one mobile device configured to enable a participating user to make contributions to the system.

Fig. 3 is a workflow diagram illustrating the steps involved in the network implemented method of the present invention.

Fig. 4 is a diagram providing a generic computer hardware and software implementation of certain aspects of the invention, as detailed in the description.

In the drawings, embodiments of the invention are illustrated by way of example. It is to be expressly understood that the description and drawings are only for the purpose of illustration and as an aid to understanding, and are not intended as a definition of the limits of the invention.

DETAILED DESCRIPTION

The present invention provides a computer network implemented platform that enables the platform operator, or a client of the platform operator, to manage the completion of one or more activities, the one or more activities including a plurality of tasks, each task including optionally a plurality of sub-tasks, by inviting a plurality of users (through an open crowd sourced invitation) to complete one or more particular tasks or sub-tasks based on one or more targeted incentives, designed to motivate the completion of tasks or sub-tasks. Users responding to an invitation from the system are referred to as "participating users".

The platform of the present invention is configured to assign one or more targeted incentives to completion of the tasks or sub-tasks. More specifically, the task manager utility, one of the components of the platform described in greater detail below, is operable to manage the completion of one or more activities by allocating particular incentives to specific tasks or sub-tasks. In a more detailed aspect of the invention, the system of the present invention is configured to track progress in the completion of the one or more activities and, based on the current state of progress, dynamically alter in real time or near real time the incentives so as to optimize performance of the system, relative to one or more "desired outcomes" (defined below) associated with the one or more activities, or the associated tasks or sub-tasks.
In one aspect of the invention, these incentives are tracked by the system, and these incentives, or some of these incentives, are then redeemable for products or services of tangible value to participating users, which may as an option in some cases include financial consideration. "Incentives" in this disclosure refer to incentives that include incentives with tangible value as opposed to the social incentives used for example in WIKIPEDIA.

It should be understood that the integration of incentives into a platform based on, or incorporating, crowd sourcing is a novel and non-obvious departure from prior art approaches and solutions.

In another aspect of the invention, the platform of the invention incorporates a range of different types of incentives, and the platform (by operation of the task manager utility described below) enables a range of strategies for motivating specific behaviours of participating users, relevant to completion of tasks and sub-tasks. One aspect of the design of the platform of the present invention, is the use of incentives that are targeted to promote the completion of tasks and sub-tasks in a way that is consistent with desired outcomes, including for example accuracy. Designing these incentives, and implementing these to a scalable platform designed to enable one or more activities, with participation of a significant number of participating users, is not a trivial project. One aspect of the invention is the combination of specific processes, routines, or software utilities that together provide a mechanism for motivating the mentioned specific behaviours in a way that is highly efficient and cost effective.

Generally speaking, the incentive types embodied in the platform include "rewards" and "shares" (as described below) and also "penalties" in the event that tasks or sub-tasks completed by a participating user, are found by another participating user to be inconsistent with defined "quality attributes" (this term is also defined below).

"Rewards" in this disclosure refer generally to incentives that are accumulated by a participating user into their account provided by the platform for completion of tasks or sub-tasks. Rewards are credited to the participating user's account, and based on rules defined by the platform, rewards accumulated across several tasks or sub-tasks may be redeemed for a product or service or some other item of tangible value to the participating user. Rewards by operation of the present invention may be credited to the participating user immediately, and even though rewards may not be redeemable immediately (depending on the balance of the participating user's account and other redemption rules), these rewards may be updated immediately, and an
update balance optionally may be generated and communicated to the participating user, thereby providing a direct incentive, tied to the desired behaviour from the participating user. The incentives structured in this way take advantage of the added motivation associated with providing immediate gratification.

Rewards are generally implemented in the system of the present invention as "tickets", as described further below. Rewards may be expressed in amounts in a "virtual currency" as best explained under the Example in Operation set out below.

"Shares" in contrast denote a partial ownership in a product resulting from the activities (such as a library of data objects, a directory, a software program or other product) that may be based on a percentage of the product based on total contributions to the product. Revenue generated by the operator of the platform associated with the product may result in allocation of a portion of the revenue to the various participating users who contributed to aspects of the product, based on their accumulated shares associated with such contributions. There are many specific mechanisms for variation of the assignment of shares that are contemplated by the invention. For example, a total number of shares may be assigned to an entire "record" or "profile" as explained below. A record may include a plurality of tasks and/or sub-tasks which may generally correspond to the fields of the record. Specific fields may be assigned the same number of shares, or a varying number of shares, as long as the total number of shares cumulatively for the fields corresponds to the assigned share value for the record. Some fields may involve contributions from more than one participating user in which case the number of shares for the field may be distributed. The number of shares allocated to the one or more participating users who made contributions may be used by the platform to calculate the total participation in the record for the participating users. The platform, in one aspect thereof, is operable to calculate allocations of revenue associated with records, or collection of records, and credit these allocations to the account of participating users. For example, specific attributes may only be associated with participating users that reach specific thresholds of share ownership, such as for example a participating user who is a majority shareholder for a record or a portion of the record. Other privileges may be possible such as providing advertising space to a participating user who meets such threshold requirements, free of charge or on a reduced cost basis. The advertising space may be associated with the relevant record. Such participating user may be provided the ability to associate an external link for example to a record which may provide a higher search engine ranking for example to an online business or business associated with a web page, in which the participating user may be an owner or a
partner. Particularly if the record in question gains importance (for example through a high number of clicks in a product incorporating the record) the benefits provided could be significant. These benefits that may be associated with shares can further increase their perceived value to the participating users, which in turn further motivates participation.

One advantage of shares is that they confer "ownership" to participating users and thereby leverage some of the inherent motivations that ownership inspires in many individuals. It should be understood that monetization of the product is often not possible until the product is completed, and which may require significant work, which may be performed over a relatively significant amount of time. Financing the costs of such work, performed based on prior art methods usually involving at least some paid employees or contractors, can be prohibitive.

Shares, allocated in accordance with the present invention as described, confer immediately an asset that has intrinsic value to participating users, yet the obligation to pay the participating users is contingent upon, and deferred to the time of, monetization of the product. The intrinsic value flows from the immediate allocation of the shares that represent a promise to pay a share of real revenue, if this materializes. Pride of ownership is a natural human response and tends to motivate greater investment of efforts, and in some cases on a more timely basis. The concept of shares enables the operator of the platform to seed at little or no additional monetary cost, a broader range of activities than may otherwise be economically feasible. The application of this concept to the type of platform described, and the specific implementation of this aspect (as described), is a novel and non-obvious aspect of the present invention.

Shares generally will be assigned to a "record", as described below, but may be allocated between multiple participating users making contributions to the record. As a specific example, a record may consist of a recipe submitted by a participating user. If significant clicks or downloads are associated with the recipe, for example because the recipe gains recognition for its quality, for example through online recommendations distributed through social networks, then significant revenue may be generated for example through online advertising and other means. The platform of the present invention is operable to create an online environment that motivates individuals having high value content to contribute, or the ability and willingness to generate high value content, to gravitate to the operator's environment, or that of its clients, rather than to competing environments without access to the present invention.
In a particular implementation of the invention, the "penalties" are assessed against the particular "rewards" or "shares" associated with the particular tasks or sub-tasks where there has been an error or other failure to meet the quality attributes. This aspect of motivating the verification or correction of work completed by one or more participating users, by one or more other participating users, provides surprising improvements in the ability of the platform to help achieve the desired outcomes. The penalties assigned by the platform introduce accountability to the operations of the system, and in essence make groups of participating users (defined by the platform based on a group participating users engaging in tasks or sub-tasks linked to the same activity) self-policing. This concept of penalties, and its application as part of the system described herein, reduces the likelihood of completion of tasks or sub-tasks in a way that is not consistent with the quality attributes - e.g. the proportion of inaccurate records is reduced.

Further details regarding rewards, shares, and penalties are disclosed in connection with the Example In Operation set out below.

While the incentives embodied in the platform of the present invention serve to motivate participating users to deliver the desired outcomes, ultimately there is a monetary cost associated with rewards and shares, and the effectiveness of the platform may be enhanced by relying on other ways to motivate desired outcomes from participating users. As previously explained, social incentives have had limited success in initiating rapid deployment of resources from the crowd, applied in response to a set of targeted activities or related tasks and/or sub-tasks. The combination of incentives (for example, rewards, shares, and penalties) represents one aspect of the invention that provides significant advantages over the prior art. In addition to, or instead of, the use of said incentives, the platform embodies another means to motivate participating users and that is their interest in competing with one another in the context of a game defined by one or more rules. In a particular aspect of the present invention, the platform is configured to include or embody one or more operations, mechanisms and/or interfaces that relate to one or more elements of gaming mechanics, which are integrated in general activities initiated by the platform and relating to the completion of the task and/or sub-tasks. "Game mechanics" may be defined as the rules, game designs or other attributes that contribute to individuals having a fun and engaging experience in playing a game.

One aspect of the invention, is the conception of a platform directed at managing the completion of tasks or sub-tasks based on crowd sourcing with a gaming aspect or component. This particular aspect of the invention introduces competition into the collaborations enabled by the
present invention that relate to groups of participating users working together by each making contributions to the activities, by completing tasks or sub-tasks. This unique integration of collaboration and competition, first conceived and implemented by the inventors of the present invention, introduces a new concept, namely of "competitive collaboration". The present disclosure describes a computer network implementation of this concept, wherein the platform of the present invention enables the management of completion of tasks and sub-tasks by the crowd, where the motivation of participating users from the crowd is generated in part by linking the completion of tasks or sub-tasks to one or more gaming elements such that participating users compete to achieve scores higher than the scores of other participating users, where scores are determined based on points allocated for completion of particular tasks or sub-tasks.

Combination of these crowd sourcing and gaming elements, and also combination of these aspects in the manner described in this disclosure, was not disclosed in the prior art and is an innovation that has produced significant and surprising improvements in the ability of the platform described in this invention (and the related methods) to achieve the desired outcomes efficiently. Examples of implementations of the gaming aspect are provided below.

It should be understood that the invention involves (a) the crowd sourcing aspect, with incentives as described, and/or (b) a crowd sourcing component combined with one or more gaming elements.

The platform is configured to enable the operator, or clients of the operator, to deploy one or more campaigns designed to motivate completion of tasks or sub-tasks efficiently, and in a way that is responsive to a number of desired outcomes such as prioritization of specific activities, or tasks or sub-tasks, including based on revenue opportunities, time sensitive campaigns requiring specific information sets, and so on. These campaigns may be designed based on one or more known attributes, or may be designed on the fly. Also, campaigns may be optimized based on the results delivered by the crowd activities by dynamic modification of the campaigns by operation of the platform. In design of such campaigns, deployment of these campaigns, and optimization of campaigns during their deployment, it is desirable to embody in the platform a range of tools for motivating the participating user behaviour.

In one aspect thereof, the present invention provides such a range of tools, with its incentives and gaming elements, and which can be varied and combined by operation of the platform (as described) to enable targeted motivation of participating users, which in turn enables efficient
and quick completion of tasks and sub-tasks, and creation of products based on the work completed. As a result, products (whether directories, software programs, or other collaborative projects) may be completed with improved quality and at a lower cost. Furthermore, the present platform (and related methods) enables the operator of the system, or its clients, to engage in a broader range of collaborative activities than would be possible based on prior art methods. This provides significant advantages because prior art methods generally require decisions to engage in some activities and not other based on prediction of which activities are likely to result in the best revenue generation outcomes.

Furthermore, prior art methods usually require decisions on a specific number of activities, likely based on prediction of which activities will result in optimal return on investments. This may require concentration on a smaller number of projects and may limit the scope of activities that would otherwise be possible. Also, sound prediction of the specific products that are likely to provide stronger revenue potential can be difficult. The present invention creates a platform where a broader range of activities may be enabled, some activities being initiated by the interest of participating users which may provide a good indication of activities that may have revenue potential, such that activities can expand organically and thereby create value that would not have been generated based on a centralized, managed approach.

The task manager utility, in one aspect thereof, is operable to initiate the creation and distribution of an open crowd source invitation. The invitation may take a number of different forms, and may be distributed in a number of ways. For example, the invitation may consist of posting a task or sub-task on a web page, for example a web page related to an activity. The activity, or the associated tasks or sub-tasks may be promoted for completion by means of communication to the crowd for example by email. The platform may be operable to match activities, or their tasks or sub-tasks with particular groups of users based on attributes that may result in the desired outcomes, for example based on interest, location and/or other attributes. The platform may include one or more specific utilities or processes for targeting tasks or sub-tasks to specific users, but this other invention is addressed in a separate patent disclosure of the Applicant.

In another aspect of the invention, a mobile application linked to the platform is loaded on a mobile device of a user. The mobile application is operable to obtain, for example on pull basis, one or more data elements that relate to one or more activities that may be of interest to the
user. These data elements are used by the user to initiate a request for one or more tasks or sub-tasks for completion by the user.

Tasks or sub-tasks may be completed using a suitable utility for providing the participating user’s contribution, for example, submission of information meeting defined requirements, referred to as a task completion utility in the present disclosure. The participating user may be associated with any manner of network-connected computer device. The network-connected device may be a computer device such as a desktop computer, laptop computer, tablet computer or other similar device, connectable to the platform via the Internet for example by means of a browser session, in order to access one or more web forms that may correspond to the record described below, or an aspect of the record. The participating user may provide the information requested by the web form, which by clicking a "SUBMIT" button or equivalent may be communicated to the platform for integration into one or more system initiated workflows embodied in the record.

The network-connected device may also be a mobile device such as a smart phone, and completion of task or sub-tasks may occur by means of a mobile application loaded to the mobile device or smart phone. Further implementation details are provided below.

The mobile application may be operable to deliver to the platform the user's contributions, which are integrated into the workflow implemented by the platform for completing the various tasks or sub-tasks. Further details on this aspect of the invention are explained below.

The task completion utility may also provide to participating users one or more tools to enable collaboration between participating users in regards to completion of tasks or sub-tasks. For example, task completion utility may enable participating users information elements as a possible duplicate, may enable participating users to make suggestions for possible information elements for comment by other participating users, before submission to the system. The participating users may also provide possible suggestions for corrections to information elements, prior to submission. This may be to arrive jointly at correct answers and possibly to suggest changes without incurring rewards/penalties as explained below, possibly as a form of courtesy from one participating user to another.

The prior art (including known technologies and solutions) does not provide a way to manage the completion of tasks or sub-tasks involved in such activities (including, for example, the
updating a local business directory) that yields data of acceptable accuracy. Nor does the prior art disclose a solution for ensuring that the activity or activities are completed in a way that is efficient enough to enable operators to access the products (in this case an updated directory) in a way that is affordable. This is aggravated by the fact that while businesses leveraging, for example, location data can generate significant revenue over time, often through advertising data, a significant user base is often required before revenue reaches a point where accurate data (obtained based on prior art methods) becomes accessible to operators. Also, capital to fund access to expensive yet accurate location data is often difficult to obtain while revenues are weak. This results in the launch of web and mobile commerce platforms that have the potential to provide significant benefits to users, but adoption suffers without access to accurate data. This may result in the failure of what would have otherwise been viable businesses. This particular example, based on location data, illustrates the need for a better solution for completing tasks or sub-tasks, with participation of a plurality of individuals, on a more efficient basis, yielding better products and outcomes, including better and more affordable location data. The present invention provides this solution.

Accordingly, collecting up-to-date location data such as for example business profile information, globally may require the following:

1) participation of locals to tap into their local knowledge (as opposed to centralized employees who will require greater resources to discover changes);

2) active participation of these locals to keep up with the rate of change of such information (businesses in any community frequently open, close, and change their information); and

3) accurate data (in order to avoid for example mapping products inaccuracies, which may result in users perceiving that they have been misled).

Definitions

It is useful to explain the scope of the invention by defining one or more terms used in this disclosure.

Many activities are time intensive, and often involve multiple tasks, undertaken by a plurality of individuals. The plurality of individuals may be involved because of the volume of the work involved in the activity, or because in order to complete the activity efficiently, specific tasks involved in the activity are allocated to individuals with characteristics that enable them to complete the tasks more quickly, or in a way that is consistent with qualitative objectives such
as accuracy, consistency, compliance with specific standards, protocols or templates, interoperation with systems, or other factors ("qualitative attributes"). A skilled reader will understand that the present invention may enable the application of a wide range of qualitative attributes.

The present disclosure refers to an "activity" or "activities", to describe work involving a plurality of individuals resulting in desired outcome. The desired outcome may be the creation of a product such as a directory, or the enhancement of a product such as for example an update to a database; or the enhancement of information or knowledge in regards to one or more topics, or enhance common knowledge about one or more particular entities. For example the activities may relate to tracking events, compiling up to date information on a range of topics, or the like. The desired outcome may relate to the completion of one or more processes for the product such as its validation, testing, verification, or correction. The activity may also relate to subset of a product, such as a particular portion of a directory that has been earmarked for creation, correction or verification. The desired outcome may also include development of a computer program, where a plurality of individuals write computer code components or routines, which are then assembled to provide the computer program. The product may also include a series of images taken of a list of target objects or locations. The product may be the creation of a series of 3D models for a specified list of locations or objects. A skilled reader will understand that the present disclosure relates to a wide range of activities, covering a wide range of domains, where co-ordination of the work of a plurality of individuals is involved.

Traditionally, the work related to such activities is completed by a group of employees or contractors ("activity team"). The costs associated with their engagement, and providing them with the environment to perform their work (such as systems, possibly office space to enable their management and collaboration) can be quite prohibitive.

Also in many domains, new activities or aspects of activities may arise regularly, and the activity team may have been assembled with attributes of one or more specific activities in mind. The skill set or other attributes of the team activity may not however be ideally suited for a new activity or activities, which may result in degradation of the ability to complete activities efficiently. Traditional activity teams may not be sufficiently dynamic to provide an optimal mix of resources to complete the activity efficiently, especially with the definition of new and different activities on a regular basis, or activities that by their nature require a wide range of different attributes in the team members. A more dynamic approach to staffing activity teams is required.
There is therefore a need to assemble activity teams efficiently to address a broad range of possible "attributes" (that may be referred to as "participant attributes"). A skilled reader will understand that these participant attributes may relate to any particular attribute that enables the competition of the activity, with the desired outcome. These may include special skills, particular knowledge or expertise, certifications, particular experience, availability or willingness to take on specific tasks, level of interest (because a better outcome may be possible if a team member is interested in the subject matter of the activity or in the realization of the desired outcome).

The present invention extends for example to location related activities, for example, the creation, updating, verification, or correction of a directory, where familiarity with a particular location such as a neighbourhood, city or other geographic area, may be an important participant attribute because a user based on such familiarity may be well placed to complete a task associated with the particular location in a way that is consistent with the desired outcome, for example, quickly and accurately and at lower cost. Further in relation to location related activities, the participant attributes may relate to the current location of the participant. For example, if a task related to updating a record for a business at a particular location, a participant in the vicinity of the particular location may be well placed to update the record quickly and accurately. The present invention also contemplates participants extracting information from other sources, for verification, updating and correction by operation of the system. A particular participant may have the time, or be familiar with third party sources that may for example be accurate for particular locations, and the task may consist of extracting meta data for one or more particular locations and providing this meta data to the system of the present invention. This extraction of data from third party sources may also seed other tasks, such as for example the correction, verification or updating of the meta data.

As mentioned, activities, as described in this disclosure, are certainly not limited to management of directories. A skilled reader will appreciate, that the present invention may relate to activities covering the general requirements described, in a wide variety of areas, and relating to a wide range of different qualitative attributes. These may include for example building a list of available applications such as mobile applications, compiling a set of profiles covering an extensive category of items, such as a set of profiles on movies, music, or celebrities.

However, directories illustrate the problems that the present invention addresses, and also helps understand the important advantages that the present invention provides. The present disclosure explains the operation of the invention in connection with development of directories
based on location data as an example of the present invention. The invention, however, should not be understood to be limited to application directories alone.

Directories can be important and valuable data sets. Their compilation in an accurate form can be very expensive, especially given that for example in the case of a business directory, businesses open and close regularly, and therefore it is important to update records regularly. If a team is formed and dedicated to manage a directory, numerous problems may arise. Personal familiarity with directory records or record sets may improve the efficiency of completion of directory related tasks. However, creating and managing a team to address numerous local databases may involve either multiple teams at different geographic areas, which adds cost and complexity to the activities, or one or more teams with better coverage or some locations than others, but there may be increased costs of engaging in the activities in geographic areas with less than optimal coverage. Also engaging local contractors for specific activities presents challenges in recruiting and managing personnel locally. Especially given that because of economics personnel engaged for such activities receive relatively low wages, the quality of the data may suffer. This quality may improve by investing in, for example, significant supervision of staff, including using auditing or verification processes, however, this also adds to the cost and may delay the completion of tasks. Generally, speaking the industry has responded by engaging significant editorial resources, who verify and correct data or products, again at a significant cost.

These and many other practical aspects of managing directories tends to result in directories that are relatively expensive to produce, and still have less than optimal coverage and are known to contain a significant number of errors. Also most directories, based on resource limitations, are updated on cycles that for cost reasons are not as frequent as the rate of changes to records (for example new businesses opening or businesses closing). Directory records tend to become stale and there are few reliable and affordable means to identify which records require updating and when.

At the same time, web and mobile commerce has created a significant demand for data that includes or is based on location data (referred to as "location data" in this disclosure. Most business models associated with web or mobile commerce solutions however, practically speaking, require affordable location data, that is nonetheless accurate. If for example a local directory of businesses points enough users, enough of the time, to a business that has closed, this can have a very negative impact on the directory's business.
Description of System

Fig. 1 shows a system implementation of the present invention, in one example thereof.

The platform described in this disclosure may be implemented as a web application, as best shown in Fig. 1. The system of the present invention may include at least one web server (10). The web server (10) is operable to run the web application (12). The web server is linked to a database (14).

It should be understood that the system of the present invention is not limited to any particular computer network implementation. Fig. 1 illustrates only a representative implementation of the system of the present invention. It should be understood that web server (10) may be implemented by means of a distributed computer network architecture, server farm, or cloud network.

In addition, while the disclosure provides certain details regarding one or more computer program aspects of the present invention, the functions of the computer program are explained without limiting the application to the invention to any particular computer program architecture. Each functional component may be implemented as part of a computer program module with multiple functions, or may be implemented as including one or more other functional components. A skilled reader will understand that numerous possible implementations are contemplated.

The web application (12), as shown in Fig. 1, may include an administration utility (16). The administration utility enables users to register with the system, and establish their profile on the database (14). The administration utility (16) is operable to update each profile with rewards, shares or associated penalties, as explained below.

The web application (12) also includes an event tracker (18) which enables the tracking of each user activity of a participating user in connection with the platform of the present invention. The event tracker (18) supports a number of other operations of the platform, including the task manager (20). The task manager (20) is best understood as a back-end, administrative utility, that enables the operator of the platform, or third parties authorized by the operator, such as operator's clients, to design and deploy one or more activities or associated campaigns, and the tasks or sub-tasks that are linked with such activities, by operation of the platform. Deployment
of activities on the system triggers creation of tasks and sub-tasks as explained in this disclosure.

The system also includes an incentive manager (22) which may be an aspect of task manager (20) or a utility linked to the task manager (20). The incentive manager (22) enables the operator, or the operator's clients, to associate one or more incentives with the tasks or sub-tasks. For example, the incentive manager (22) may enable administrative users to (A) select from a range of types of incentives (including for example rewards and shares as explained above), (B) select the value of such incentives, (C) select penalties to be associated with specific incentives, (D) select the value of such penalties, and/or (E) select one or more gaming elements, and the link between such gaming elements and the incentives and/or penalties. In addition, the incentive manager (22) enables the administrative users to establish the specific domain of application of (A), (B), (C), (D) and/or (E), which may consist of the following domain of application components, namely a specified field in a record (see below), one or more tasks or sub-tasks, or one or more activities. The domain of application may be selected by the administrative user using a suitable incentive manager graphical user interface, or may be selected from a list of such domain of application components generated by the platform based on one or more associated criteria selected by the administrative user, for example all "OPEN" domain of application components related to "FIELD A" (for example a restaurant directory) with "PRIORITY X" (which may be based on associated revenue opportunities).

The incentive manager (22) may include or embody one or more templates that define default incentives or gaming elements based on the nature of the activity and/or historical data indicating performance relative to desired outcomes based on the nature of the activity. Administrative users of the platform may modify incentives and/or gaming elements to achieve desired results such as improving accuracy through expanded verification/correction, additional incentives or gaming outcomes for providing specific detail, or completing tasks or sub-tasks within certain time frames.

The task manager (20) may also be linked to, or include, an analytics engine (23) that is operable to analyze a plurality of operations of the platform, including metrics related to the completion of tasks or sub-tasks, such as for example the demographics of participating users who complete certain types of tasks or sub-tasks, rate of completion of specific activities, projected time of completion of an activity, and so on. The analytics engine (23) may be operable to reveal insights that enable optimization of incentives. For example the analytics
engine (23) may be operable to run test scenarios to reveal that at a certain time of day, in a
certain location, with a particular group of participating users, a lower level of incentives is
sufficient to produce the desired outcomes. A skilled reader will understand that an analytics
engine (23) that incorporates known optimization techniques can provide effective optimization
of incentives used by the platform of the present invention to achieve desired outcomes thus
improving efficiency. For example, the analytics engine (23) may enable the generation of data
regarding the rate at which tasks are completed, may provide information enabling the
rebalancing of rewards, or enable the tracking of completion of campaigns.

The analytics engine (23) may be used to test incentive scenarios to predict or estimate the
impact of modification of incentives or gaming elements on achievement of desired outcomes.

The analytics engine (23) may be linked to a reporting utility (24) to generate one or more
reports. For example the reporting utility (24) may enable administrative users to generate a
report analyzing the incentives provided to and/or gaming elements assigned to particular users,
and the resulting behaviour of such participating users. A skilled reader will understand that
analyzing the motivators especially for a group of participating users responsible for a significant
proportion of completed tasks or sub-tasks may yield significant opportunities for optimization of
performance of the platform. The functions of the analytics engine (23) and the reporting utility
(24) may be used to enable dynamic changes to the incentives and/or gaming elements to
improve performance of the system relative to the activity objectives, by operation of the task
manager (20).

In a particular aspect of the invention, the incentive manager (22) is operable enable the
allocation and calculation of a virtual currency for applying rewards (as described above) in
connection with tasks or sub-tasks enabled by the platform.

The system may also include or be linked to a redemption utility (26) that enables the
conversion of the virtual currency into monetary currency or the purchase of products or
services based on the virtual currency. The redemption utility (26) may include or be linked to a
transaction server (not shown) for processing transactions related to the redemption of virtual
currency. A skilled reader will understand that various mechanisms for redemption are
contemplated by the present invention. An example of such a mechanism is described below
under the heading "Rewards".
The incentive manager (22) is operable to generate a "ticket" in response to a participating user completing a task or sub-task defined by the system of the present invention. The event tracker (18) detects the completion of the task or sub-task. This information is provided to the incentive manager (22), which updates the profile of the participating user to reflect the accrual to his/her allocation of rewards.

The system may also include a web presentment utility (28) for generating and publishing one or more web pages, such as for example web pages incorporating records (explained below) or web pages used to generate the provide access to the one or more prize redemption pages referenced below.

In another aspect of the invention, the platform is configured to enable the dynamic modification of incentives in order to achieve desired outcomes, without for example alteration of the workflow involved in assigning tasks or sub-tasks to specific participating users, or in completing tasks or sub-tasks, and without the need for significant work to implement changes for example in terms of software configurations or database configurations. The dynamic modification aspect of the present invention is enabled by the record manager (30) aspect of the task manager (20), which is explained below. As previously described, incentives allocation by operation of the platform of the present invention may include, rewards, shares, and associated penalties.

In a still other aspect of the invention, the event tracker enables the monitoring of progress of the platform in initiating the participants to completing the task or sub-tasks.

The incentive manager (22) is operable to access one or more parameters regarding desired outcomes, such as for example priority of clients of the operator of the present invention, such as the scope of activities, or associated tasks for sub-tasks, compensation paid by the clients. The incentive manager (22), in one aspect thereof, enables the operator, or one or more clients of the operator, to develop one or more campaigns with a view to motivating the crowd to complete a series of tasks. Based on performance relative to campaign goals, an administrative user may modify the incentives, or the platform may dynamically modify the incentives.

By operation of the incentive manager (22), the system of the present invention enables participating users to check the work of other participating users, and if errors are found or suspected, to correct the information.
A skilled reader will appreciate that many possible examples or rewards/shares/penalties are possible, as well as many possible gaming elements. The disclosure, including the Example in Operation below, provides only a few examples that serve to illustrate the various possible particular incentive or gaming element implementations, based on the platform and related methods disclosed herein.

Rewards

As explained previously, rewards may be implemented as "tickets", which may be collected and then in one implementation placed into draws or raffles for prizes, by operation of the redemption utility (26). The platform may be operable to generate one or more lists of prizes, and then sub-sets of these lists may be associated with one or more particular tasks or sub-tasks, or record fields (as explained below). The platform may generate for participating users sub-lists dynamically, and communicate these sub-lists to participating users on a regular basis, such sub-lists including prizes currently available for which the participating user is eligible. Such communications or other similar communications may be used to invite the participating users regularly to one or more prize redemption web pages presented by the system of the present invention. The one or more prize redemption pages enable participating users to select one or more links associated with specific prizes, and these links may be operable to debit the account of the participating user and enter the participating user into the draw, subject to the applicable draw rules which may be accessed via the prize redemption web pages.

The prize redemption web page may change regularly and may include from time to time particularly desirable prizes, available in draws with improved odds and/or for an attractive number of tickets, so as to provide one or more "special prizes". These and other mechanisms may be used to attract participating users to the prize redemption page or pages on a regular basis. The more the participating users return, the more they are likely to use their tickets, the more they use their tickets the greater the need to generate more tickets. Alternatively, one or more highly desirable prizes are presented, with associated draw rules designed to motivate the participating users to engage in high priority tasks or sub-tasks.

In a particular aspect of the invention, the greater the number of tickets submitted into a draw the better the chance of winning, however, a single ticket may be sufficient to win the draw. This motivates participating users to generate tickets, but also prevents participating users with a lesser number of tickets from being discouraged and perhaps withdrawing from completion of tasks or sub-tasks.
It should be understood that the incentive manager (22) enables administrative users to tune incentives, including for example prizes and associated redemption rules to for example ensure that key participating user groups continue to be motivated.

5 Shares

In a still further aspect of the invention, the incentive manager (22) is operable to allocate a virtual asset based on contributions to the completion of a task or sub-task. The virtual asset confers an "ownership" or "partial ownership" interest in a product or a component thereof such as a specific record of a directory. The virtual assets can be configured to provide a significant future value.

In a still other aspect of the invention, the platform may include or provide a virtual stock exchange that enables the trading of shares created by operation of the system. Shares may for example be traded for tickets, or shares related to one record may be traded for shares related to another record, and so on.

Penalties

In another aspect of the invention, the incentive manager (22) includes or embodies one or more processes for promoting accountability among users and thereby decreasing the likelihood of users failing to complete tasks or sub-tasks in a manner that is consistent with the qualitative attributes. One aspect of this is the assessment of penalties if for example participating users complete tasks or sub-tasks but in a way that does not meet the qualitative attributes.

Various penalties are contemplated by the present invention. One aspect of penalties is the removal of tickets and/or shares, as applicable, from the account of a participating user in the event that another participating user corrects the information elements that resulted in tickets being allocated to the first participating user. The penalty may be a portion of, or multiple, of the tickets allocated to the first participating user. The amount of the tickets may be allocated to the second participating user making the correction. It may be useful to reduce the likelihood of frivolous corrections. And also it is useful to have a mechanism for resolving disputes regarding whether the information elements meet the quality attributes or not (for example is an entry to a field of a record accurate or not).
In one implementation of the incentive manager (22) a participating user challenging whether an information element meets the quality attributes may be required to post a bond based on a specified amount of his/her tickets and/or shares pending confirmation of whether the challenge is appropriate, for example based on verification by the operator of the platform, or pending outcome of a dispute resolution routine. The bond may be advantageous in that the challenger may consider its challenge more carefully, and for example verify the correct information, prior to issuing the challenge which tends to promote the desired outcomes.

The challenge may involve a formal challenge, which results in a communication to the first participating user, who may have a defined period of time to respond to challenge, and if no reply is received then the challenge may succeed. Alternatively, any challenge may be immediately referred for dispute settlement whether the first participating user responds or not.

A range of dispute resolution mechanisms is possible, which may be implemented by operation of a dispute resolution (32) utility that is part of the platform of the present invention. For example, disputes may be referred by the platform to an editor, or a participating user who has made significant contributions in an information area relevant to a dispute.

Gaming Elements

The platform includes or embodies one or more processes or features that enable participating users to engage in "competitive collaboration" as previously explained based on one or more gaming elements. These gaming elements are best understood as one or more particular aspects of the incentive manager (22). These may include for example publication of statistics regarding particular participating users with relatively high scores based on winnings (by redeeming tickets), based on total tickets earned, total shareholdings, total revenue generated based on shareholdings and other metrics that may inspire performance and perhaps competitions between participating users generally, and perhaps between particular groups of participating users in order to create rivalries within specific groups. Such competition and particularly rivalries can encourage increased levels of activity.

The gaming elements may be enabled in part by a social networking engine (34) linked to the incentive manager (22) for enabling participating users to organize into user initiated groups, in
part to track reward/penalty/shares performance within one or more groups, initiate particular challenges and the like.

Records

5 The completion of tasks or sub-tasks by operation of the present system, may occur by means of a "record" created by the system. The record in the present invention is analogous to a smart form, and may be implemented as a meta file, typically including one or more fields for submission of information (whether text, computer code, images or otherwise), where the record also may embody one or more attributes for one or more of the fields. These attributes may relate to a relationship between two or more fields. The relationship may be defined by hierarchical relationships between fields, for example parent-child relationships between them. The relationships may further be defined for example in the form of logical operations between fields and/or their content. The system is operable to also assign specific rewards/penalties (e.g. particular tickets, shares or penalties) to the contribution of content to specific fields.

10 In one aspect of the invention, the records are configured to enable multiple users to contribute information, however, a particular field is normally assigned to one participating user only, to avoid duplication of efforts. However, where a particular field is a multiple choice, one participating user may select one of the options while another participating user may select another option.

20 Records are best understood as an output of the task manager (20), generated by operation of the task manager (20) or a utility that is part of the task manager (20) or the record generator (30).

The record generator enables the assembly of records with the various fields, relationships between them, permissions (defining what participating users can complete what fields), associated incentives/penalties, and other attributes. Records are configured such that attributes may be modified on the fly without affecting the operability of the record as a whole. The system is also configured so that modifications can be made at the same time across several records without affecting the operability of individual records, or records collectively.

For example, if information linked to a particular field has been challenged, the field may be automatically "locked" by the system, as well as any other fields or attributes that depend on that field. The "locking" of the field may prevent additional information from being added to fields that depend on the "locked" field, until the challenge has been resolved. Other fields
however may continue to be completed by participating users. Once a "lock" has been removed the corresponding "lock" to other fields or attributes may also be removed.

Also, if a participating user is identified who has been making contributions that do not meet the quality attributes intentionally or with regularity, his/her contributions may be dynamically removed and re-submitted to the crowd via a new invitation, without the need for significant data processing.

This particular aspect of the implementation of the present invention enables the various dynamic operations involved in both completing tasks and sub-tasks and also the generation and exploitation of products based on completed tasks and sub-tasks and presents a significant innovation provided by the present invention.

Another aspect of records in the present invention, is that the records and the database (14) are configured to enable information from the records to be compiled into the database without little effort, in a manner that is known. This enables the consumption of information obtained by operation of the present system by third party entities on a real time or near real time basis. In this way, one aspect of the invention is a computer network implemented distribution network for distributing information obtained by operation of the platform of the present invention.

In another aspect of the record generator (30), records are generator so that one or more fields are associated with labels that consist of a code defining the field attributes rather than for example a label expressed in text form. This enables the derivation of information from records independent of the text used in the fields, including for example any particular language used to express labels. Moreover, information provided as content for a field may be recorded to the record as a form element defined by a code rather than the text content. This is easily accomplished where the information elements are selected by users from a menu of possible items, or where the code is defined based on a semantic analysis of contributed text. One of the advantages of generating records in this way is that derivatives of the information may be generated and used dynamically. For example translations of a database may be mapped using one or more simple operations rather than a more complicated translation which may result in errors.

The operation of records, as a function of the task manager (20) is illustrated in the example provided below, which is based on application of the present invention to location data.
A Place Record is created by applying schema rules to available place data. Data is stored as a set of rows with references to relationships between them and their type (by field id). The schema is the set of all possible fields with corresponding descriptions of their format and dependencies between them. A field is "dependent" when it can appear in a record only if another field is set to appropriate value.

Some possible place fields may be:

<table>
<thead>
<tr>
<th>FIELD NAME</th>
<th>TYPE</th>
<th>POSSIBLE VALUES</th>
<th>DEPENDS ON</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place Name</td>
<td>Text</td>
<td>&lt;not empty&gt;</td>
<td>-</td>
</tr>
<tr>
<td>Place Type</td>
<td>Enumeration (multiple values possible)</td>
<td>Eating, sleeping, medical</td>
<td>-</td>
</tr>
<tr>
<td>Cuisine</td>
<td>Enumeration (multiple values possible)</td>
<td>American, Greek, Asian</td>
<td>PlaceType.eating</td>
</tr>
<tr>
<td>Dress code</td>
<td>Enumeration (only single value possible)</td>
<td>Casual, formal required</td>
<td>PlaceType.eating</td>
</tr>
<tr>
<td>Room Details:</td>
<td>Enumeration (multiple values possible)</td>
<td>Private, Patio, Separate Eating Area</td>
<td>PlaceType.sleeping</td>
</tr>
<tr>
<td>Number of Rooms</td>
<td>Numeric</td>
<td>Number</td>
<td>PlaceType.sleeping</td>
</tr>
</tbody>
</table>

(i) Loading place record

The Place Record is loaded through the following steps:

1) all available data is loaded for the requested place (for each available piece of data the system looks up its field meta data in schema).
2) "independent" pieces of data are picked and these are added to "data set to be displayed".
3) the rest of the dependent data is scanned, trying to find elements that depend on elements in "data set to be displayed".
4) if any such elements are found, these are added to "data set to be displayed" and scanned again, when no remaining elements are found, the scanning stops.

5) any data that has been retrieved from the database but not depending on other data is deemed to be "disconnected" because of a previous schema change. Depending on requirements the system may delete disconnected data or just ignore it.

(ii) Displaying place record

After the place record is loaded, it is prepared for display through the following steps:

1) the credentials of the participating user who is to view the record is obtained. The fields are scanned, examining them to see whether they should be displayed based on that user's permissions. Fields are filtered out if necessary based on permissions.

2) using the context of display (web, mobile, etc.), fields may be filtered if they are not to be shown in this context.

3) the record generation is repeated to remove unneeded dependencies.

4) based on formatting rules described in the same schema, a representation is generated of the fields according to the form type (text, multi-select, etc.).

(iii) Editing place record

To edit the record, the following steps may be performed:

1) when new information arrives, the system looks up its definition in the schema.

2) the system drops those for which no definition is found, or where input format or data don't match to what is described in the schema.

3) the system generates the record as discussed above with the existing data.

4) the system iterates through new data trying to find those elements that are eligible to be stored in the database. To be eligible, the field must be independent, or dependant on existing data, and the field must be unlocked (the system may "lock" data when it is not desirable for users to modify it).

5) the system repeats the iterations until all incoming information has been processed.

6) possibly as result of the modification, some dependent data may get disconnected from the place record.
7) depending on the business logic, the incoming data will either be persisted in the database right away or stored for review (in which case the system may "lock" the field and may not allow other modifications until it's unlocked).

5 Record Completion Utility

Also as shown in Fig. 1, the system of the present invention may include a record completion utility (36). The record completion utility (36) is operable to enable participating users to complete tasks or sub-tasks, for example as directed by the task manager (20) including by operation of the records described above. The record completion utility (36) may be implemented as a client computer program that may be loaded on a computer device associated with a participating user. The record completion utility (36) may be implemented for example as a browser plug-in. The record completion utility (36) may consist of a standard browser, which by initiating a communication session with the web server (10) may be operable to load one or more records on the participating user side, such that information is provided by the participating user in one or more communication sessions. Alternatively, the record completion utility (36) may be a mobile application, as illustrated in Fig. 2.

Workflow

The present invention also includes a series of computer-implemented methods, for example based on operation of the platform of the present invention. One particular method is illustrated in Fig. 3, which includes: a method for a platform operator, or client of the platform operator to manage the completion of one or more activities, the one or more activities including a plurality of tasks, each task including optionally a plurality of sub-tasks, by:

(A) defining one or more activities associated with one or more desired outcomes, and based on the activities and desired outcomes defining one or more tasks or sub-tasks for completion by users responding to an open crowd source invitation ("participating users");

(B) associating with the tasks or sub-tasks one or more incentives for motivating participating users to complete the tasks or sub-tasks in a manner that is consistent with the desired outcomes;
(C) publishing the open crowd source invitation and the associated one or more incentives; and

(D) tracking any resulting completion of the tasks or sub-tasks by the participating users and allocating based on such completion the incentives to the relevant participating users.

The method may also include one or more of the following additional steps:

(E) Associating incentives that includes rewards and/or shares, and/or penalties associated with the rewards and/or shares.

(F) Associating with the tasks or sub-tasks one or more gaming elements for enabling gaming-based competition between participating users for incentives.

It should be understood that various other methods result from the operation of the platform, with its various features and utilities, as described in this disclosure.

Example in Operation

1) A user may register with the platform and may add a new place into the database (14). The platform may specify a minimum amount of information that must be provided before the place is eligible to be added. For example, this may include Country, State/Province, City, Place Name, and Place Address. Before this new place is entered, the system performs a duplicate check to see if the name, address, and location are similar to any places already added to the database. If there are any likely duplicates, the system notifies the user. If the entry is accepted the "new place" results in the creation of a record with the various features associated with a record for a "new place".

2) If the place is successfully added, the system may give the user a reward denominated in currency or assets. The currencies and assets may be virtual or real. The system maintains a list of every available data field that could be added with a corresponding reward value in currency or assets. The participating user's reward is determined by adding up the values
associated with the various data fields submitted by the user by operation of a record as described.

2A) There are certain types of places that may be associated with higher priority levels than others and therefore may result in allocation to the participating user of a higher reward when they are added. To demotivate users from adding fake places, may require them to for example post $10 bond when the place is added. The community would be able to review the new places added and be able to challenge any that they believed to be fake. The rewards for a successful challenge would be paid out of the $10 bond. If the new place was unchallenged, the user would receive back the $10 bond plus an additional reward of sufficient size to motivate the user.

3) After the new place was added, other users (depending on factors in their account like their permissions, transaction balances, and / or scores) may be able to view, add additional information, make corrections to any information elements previously added, verify information elements added to that place's record or profile, or flag the record as being deficient in some way. The user may receive a reward in currency and/or assets for these actions. These activities may be performed independently by any eligible user although the rewards are given to the user who is the first to successfully complete the relevant task or sub-task, i.e. in this case adding a correct new place. Users who have an affinity or skill in certain tasks over others may use tools generated by the system, by themselves, or by other users to identify which records to focus on first. The system will prioritize records for their review based on the number of rewards available for that user to receive for those tasks.

3A) If a participating user adds data, the user may receive a reward in currency or assets according to the value of the data fields added, again depending on their account balances and history.

3B) If a participating user corrects data that had been added by another participating user, then the system may debit or hold various currency and asset values from the first participating user making the correction pending the outcome to de-motivate spurious corrections. The value of the amounts debited may depend on the field being corrected. If the correction was deemed accurate, then the participating user would receive back these amounts plus an additional reward. To motivate the person who added the data to review the correction and to challenge it if it is inaccurate, the system may also debit currency or asset amounts from that participating user which they will receive back if they successfully challenge the correction. Until the outcome
of the correction is determined, the system will prevent edits to fields that depend on the field being corrected to prevent the record from entering an inconsistent state.

3C) Certain fields in the record may be eligible to be verified by a participating user depending on the various factors including the user's account, the time since the field was last verified, and the accounts of any users who last verified that field. To motivate users to verify data, a user may receive various rewards in currency or assets for verifying data. To de-motivate users from improperly receiving these rewards, the system will debit currency, asset, or score values if the field is later successfully corrected. Each field may indicate with a button or similar feature whether it is eligible for verification. The participating user may initiate that button to indicate that they have verified the data in that field. When the button is pressed, the system records the data and time, and increases the score of the data, and of the user who added the data.

3D) Records may be deficient in that they are duplicates of another record, or the record may contain invalid information. The user may indicate these cases and receive a reward if the nature of the flag is confirmed. To de-motivate spurious flags, the user may be debited various amounts of currency or assets pending the outcome. Users who have added data relating to these flags may also be debited currency or assets pending the outcome to motivate them to dispute the flags.

4) After a record is updated (including because data was added or removed, or a correction or flag was validated or invalidated), the record may display new fields for users to add, correct, or verify. These new fields may depend on the content of fields previously submitted and may offer different rewards. As users fill out a record, the value of subsequent dependent fields may increase to motivate users to continue adding data to complete the record. The rewards for adding or editing any particular data field may be increased or decreased at any time to motivate users to focus on particular types of places or to complete actions on specific data fields first in priority to other data fields, or based on other attributes. The value of the rewards available but not yet awarded may be one of the factors the system uses to prioritize which records are to be promoted to users for review or update.

5) Depending on account factors, users may exchange any currencies previously collected for prizes or for other currencies like cash. The exchange may be through an auction, direct exchange rate, or random draw. Any assets collected may generate additional currency or real currency value when certain events occur or according to a time schedule. These currencies
and assets are tracked in each user's account. Users may also be permitted to sell any assets collected and receive currency in exchange.

More specific Use Case:

A user wishes to add a new pizzeria. The user fills out the name "Pizza Rustica", with the address "123 Any Street" in addition to the country, province / state, and city. That user may receive an amount of tickets and shares for the place depending on the current reward values for those fields.

After the place is created, another user may add data to incorrectly identify that the place is a financial institution and to add further incorrect details. This user may also receive rewards for this.

Another more experienced user may be interested in making corrections. The system may prioritize this record for review based on the account history of the user who added the false data along with the potential reward value of the corrections. This user determines that the place should not have been identified as a financial institution but rather as a restaurant and makes the appropriate corrections. Currency and asset values may be debited or held from the user who added the data and from the person making the correction pending the outcome of the correction.

Once the correction is determined to be accurate, the system rewards the user for making accurate corrections. The system also updates the record to include any fields that depend of the place being a restaurant (like cuisine type, etc.). The inclusion of these fields increases the value of the rewards available on that record. Based on the increase in rewards, the record is prioritized by the system for display to users seeking to add data.

As one or more users add data to the record, the record will then be updated to include any additional fields and to update the rewards available on the record. As users update the various subsequent fields, new dependent fields may have a higher reward value to motivate users to complete the record as fully as possible. At any time, an administrative user may increase or decrease the rewards for any fields related to being a restaurant to motivate users to focus on these types of records first.
Further aspects of Implementation

(i) System Implementations

The present invention may be implemented using a distributed and networked computing environment comprising at least one computing device. In a particular implementation, at least three sets of computing devices may be provided. Each set of computing devices may comprise one or more computing devices linked by a network. Typically, at least one set of computing devices would generate and send the records over the network to a second set of computing devices. The second set of computing devices receives the records and may provide information, or correct or verify information includes in the records. However, it should be understood that the generation, correction, or verification of information, may be processed on any number of computing devices from one to many.

At least a third set of computing devices may be used to obtain or receive the information, including information in an aggregated form, for further staging, analysis, synthesis, consumption, or other use thereof. The use of the information may be user generated or machine generated.

(ii) Mobile Implementations

Further enhancements may be provided wherein one or more of the computing devices are mobile devices or wirelessly networked devices, for example as illustrated in Fig. 2. For example, the network may be or include a wireless network, the wireless network including a wireless gateway for linking the wireless network to the Internet. The network-connected devices as previously described may consist of wirelessly networked devices (50) that are operable to access the Internet via a wireless gateway (52). The wirelessly networked devices described may include a browser for interacting with the web server (10) to access functions of the web application (12). Alternatively, the wirelessly networked device (50) may include a mobile application (54), which may include one or more utilities or features providing the record completion function (36) which interoperates with the web server (10) to enable completion of records using the wirelessly networked device (50). The wirelessly networked devices could also be equipped with additional functionality for providing information regarding users that enables the targeting of particular users, including for example a GPS receiver operable to provide GPS location information to invite particular users to complete tasks or sub-tasks or to allocate tasks to particular participating users. The wirelessly networked devices may also
include one or more accelerometers or other movement sensors operable to provide movement-based or gesture-based information. Thus the messaging to be returned to the platform may include location, movement and/or gesture relevant content.

It should be understood that the wirelessly networked device as described may consist of a hand-held two-way wireless paging computer, a wirelessly enabled palm-top computer, a mobile telephone with data messaging capabilities, a portable digital media player, or a wirelessly enabled laptop computer, but could be any type of mobile data communication device capable of sending and receiving messages via a network connection. The majority of current mobile communication device users, however, use a mobile telephone with data messaging capabilities, such as server addressing capabilities such as Short Message Service ("SMS") or Multimedia Messaging Service ("MMS") or data including GPRS or 3G. The present invention therefore provides means for providing the functionality described herein, from mobile communication devices that are relatively common and inexpensive.

(ii) Generic Implementation

The present invention may be practiced in various embodiments. A suitably configured computer device, and associated communications networks, devices, software and firmware may provide a platform for enabling one or more embodiments as described above. By way of example, Fig. 4 shows a generic computer device 100 that may include a central processing unit ("CPU") 102 connected to a storage unit 104 and to a random access memory 106. The CPU 102 may process an operating system 101, application program 103, and data 123. The operating system 101, application program 103, and data 123 may be stored in storage unit 104 and loaded into memory 106, as may be required. Computer device 100 may further include a graphics processing unit (GPU) 122 which is operatively connected to CPU 102 and to memory 106 to offload intensive image processing calculations from CPU 102 and run these calculations in parallel with CPU 102. An operator 107 may interact with the computer device 100 using a video display 108 connected by a video interface 105, and various input/output devices such as a keyboard 110, mouse 112, and disk drive or solid state drive 114 connected by an I/O interface 109. In known manner, the mouse 112 may be configured to control movement of a cursor in the video display 108, and to operate various graphical user interface (GUI) controls appearing in the video display 108 with a mouse button. The disk drive or solid state drive 114 may be configured to accept computer readable media 116. The computer device 100 may form part of a network via a network interface 111, allowing the computer device 100 to
communicate with other suitably configured data processing systems (not shown). One or more different types of sensors 130 may be used to receive input from various sources.

The present invention may be practiced on virtually any manner of computer device including a desktop computer, laptop computer, tablet computer or wireless handheld. The present system and method may also be implemented as a computer-readable/useable medium that includes computer program code to enable one or more computer devices to implement each of the various process steps in a method in accordance with the present invention. It is understood that the terms computer-readable medium or computer useable medium comprises one or more of any type of physical embodiment of the program code. In particular, the computer-readable/useable medium can comprise program code embodied on one or more portable storage articles of manufacture (e.g. an optical disc, a magnetic disk, a tape, etc.), on one or more data storage portioned of a computing device, such as memory associated with a computer and/or a storage system.

While the above description provides examples of one or more embodiments of the invention, it will be appreciated that numerous other embodiments may be within the scope of the present invention, as defined by the following claims.
CLAIMS

1. A computer network implemented method operable on a platform for managing the completion of a crowd sourcing activity, the crowd sourcing activity including a plurality of tasks, each task including optionally a plurality of sub-tasks, characterized in that the method comprises:

   assigning one or more targeted incentives to completion of one or more particular tasks or sub-tasks;

   inviting a plurality of participating users to complete one or more particular tasks or sub-tasks based on the targeted incentives; and

   tracking progress in the completion of the one or more particular tasks or sub-tasks by the participating users.

2. The method of claim 1, characterized in that the method further comprises, based on the current state of progress, dynamically altering the incentives to completion of the one or more particular tasks or sub-tasks to improve performance of the participating users and completion of the crowd sourcing activity, or the plurality of tasks or sub-tasks.

3. The method of claim 2, characterized in that the method further comprises establishing a user profile for each of the participating users.

4. The method of claim 3, characterized in that the method further comprises updating each user profile with rewards corresponding to the incentives to completion of the one or more particular tasks or sub-tasks.

5. The method of claim 4, characterized in that the method further comprises implementing the rewards as virtual currency, and enabling the conversion of the virtual currency into monetary currency or tickets for participation in a prize draw.

6. The method of claim 3, characterized in that the method further comprises updating each user profile with allocation of shares to a record based on contribution towards the completion of the record, the record comprising one or more fields corresponding to particular associated tasks or sub-tasks.
7. The method of claim 6, characterized in that the method further comprises conferring based on the allocation of shares an ownership or partial ownership interest in the record, and enabling monetization of the ownership or partial ownership interest based on a valuation of the record.

8. The method of claims 3 to 7, characterized in that the method further comprises updating each user profile with penalties assessed for errors, delays or a failure to meet quality attributes in completion of the one or more particular tasks or sub-tasks by the participating users, and based on the penalties removing a portion or multiple of rewards or shares associated with the user profile.

9. The method of claim 8, characterized in that the method further comprises providing a dispute mechanism for resolving disputes regarding whether quality attributes have been met, and based on the dispute mechanism revising the assessed penalties.

10. The method of claim 3, characterized in that the method further comprises establishing a competitive gaming element for completion of the one or more particular tasks or sub-tasks by the participating users.

11. The method of claim 10, characterized in that the method further comprises publishing statistics of one or more metrics from one or more user profiles including rewards or shares earned, and penalties applied.

12. The method of claim 10 or 11, characterized in that the competitive gaming element is established between particular groups of participating users, and the metrics are calculated for the particular groups of participating users.

13. A computer network implemented system embodied in platform for managing the completion of a crowd sourcing activity, the crowd sourcing activity including a plurality of tasks, each task including optionally a plurality of sub-tasks, characterized in that the system comprises:

   a task manager adapted to:

   assign one or more targeted incentives to completion of one or more particular tasks or sub-tasks;
invite a plurality of participating users to complete one or more particular tasks or sub-tasks based on the targeted incentives; and

track progress in the completion of the one or more particular tasks or sub-tasks by the participating users.

14. The system of claim 13, characterized in that the task manager is further operable to dynamically alter, or enable the dynamic alteration, of the incentives to completion of the one or more particular tasks or sub-tasks to improve performance of the participating users and completion of the crowd sourcing activity based on the current state of progress, by operation of an incentives manager that is part of or linked to the task manager.

15. The system of claim 14, characterized in that the system further comprises an administration utility adapted to establish a user profile for each of the participating users.

16. The system of claim 15, characterized in that the task manager is further operable to update each user profile with rewards corresponding to the incentives to completion of the one or more particular associated tasks or sub-tasks.

17. The system of claim 16, characterized in that the system further comprises a redemption utility adapted to enable the conversion of the rewards, in the form of virtual currency, into monetary currency or tickets for participation in a prize draw.

18. The system of claim 14, characterized in that the task manager is further operable to update each user profile with allocation of shares to a record based on contribution towards the completion of the record, the record comprising one or more particular associated tasks or sub-tasks.

19. The system of claim 18, characterized in that the task manager is further operable to confer based on the allocation of shares an ownership or partial ownership interest in the record, and a redemption utility is adapted to enable monetization of the ownership or partial ownership interest based on a valuation of the record.

20. The system of claims 15 to 19, characterized in that the task manager is further operable to update each user profile with penalties assessed for errors, delays or a failure to meet quality attributes in completion of the one or more particular tasks or sub-tasks by the participating users, and based on the penalties to remove a portion or multiple of rewards or shares associated with the user profile.
The system of claim 20, characterized in that the system further comprises a dispute mechanism adapted to resolve disputes regarding whether quality attributes have been met, and based on the dispute mechanism to enable the incentives manager to revise the assessed penalties.

The system of claim 15, characterized in that the task manager is further operable to establish a competitive gaming element for completion of the one or more particular tasks or sub-tasks by the participating users.

The system of claim 22, characterized in that the task manager is further operable to publish statistics of one or more metrics from one or more user profiles including rewards or shares earned, and penalties applied.

The system of claim 22 or 23, characterized in that the task manager is further operable to establish the competitive gaming element between particular groups of participating users, and the metrics are calculated for the particular groups of participating users.
Defining Activities and Outcomes, and Task/Sub-Tasks

Associating Incentives to Tasks/Sub-Tasks

Publishing Crowd Source Invitation and Incentives

Tracking Completion of Tasks/Sub-Tasks and Allocating Incentives
Fig. 4
### INTERNATIONAL SEARCH REPORT

**International application No.**  
PCT/CA20 11/000462

### A. CLASSIFICATION OF SUBJECT MATTER

- **IPC:** G06Q 30/00 (2006.01), H04L 12/16 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

- G06Q 30/00 (2006.01), H04L 12/16 (2006.01)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

### C. DOCUMENTS CONSIDERED TO BE RELEVANT

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[X] See patent family annex.

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