METHOD FOR CORRECTING IMPRESSION FLOW

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ABSTRACT
A system and method for correcting impression flow to a gaming environment is provided and includes determining a number of available impressions for delivery to at least one content cell in the gaming environment for a desired time period, determining a number of available users for the gaming environment for the desired time period, generating a target number of impressions to be delivered to the gaming environment for a predefined portion of the desired time period and generating a weighting value for the at least one content cell responsive to said target number of impressions.
METHOD FOR CORRECTING IMPRESSION FLOW

RELATED APPLICATIONS


FIELD OF THE INVENTION

[0002] This disclosure relates generally to the delivery of impressions for an advertising campaign and more particularly to a method for monitoring and adjusting impression flow for an advertising campaign within a gaming environment.

BACKGROUND OF THE INVENTION

[0003] As the placement of realistic advertisements in video games becomes more popular and acceptable in the gaming community, more and more advertisers are beginning to utilize video game advertisements as a viable source of revenue. Currently, most video games that employ realistic advertisements typically utilize a static advertising technique that involves placing each advertisement in one site throughout the game play. As such, the location of the advertisement cannot change or move and other advertisements cannot take its place. Thus, although there may be multiple advertisements in one game, each advertisement can only occupy a single location throughout the entire game. This is undesirable because it lacks the ability to maximize the effect of the advertisement on the gamer.

[0004] One way to increase the effectiveness of the advertisement on the gamer is to utilize real-time dynamic advertising techniques which allow for the targeting of advertisements to specific gamers or groups of gamers. These dynamic advertising techniques allow multiple advertisements from different advertisers to be rotated throughout the same site during game play. Moreover, these dynamic advertising techniques allow for different content types, such as Billboard, Logo, Video, Audio and Beacons, to be used to display advertisements to the gamer, wherein each of these content types is capable of receiving and displaying multiple advertisements throughout the game for display to the gamer. For example, a racing game may have a billboard display advertising for one product as a racing car passes the billboard a first time. However, subsequent times the race car goes past the billboard, entirely different advertisements may be displayed. Thus, dynamic advertising not only enhances the reality of the game’s content, it maximizes the revenue generating capability of the software product by generating multiple revenue streams, as opposed to the one revenue stream generated using static advertising techniques.

[0005] Unfortunately however, one problem that currently exists with dynamic advertising involves the efficient delivery of impressions for advertising campaigns. For example, if an impression is under-delivered to a gamer, then the product is not getting the agreed-upon or desired advertising exposure which may result in poor sales, unhappy clients and a low revenue stream. On the other hand, if an impression is over-delivered to a gamer, then the product is getting more than the desired advertising exposure, which results in saturation, thereby devaluing each impression. This is undesirable for at least two reasons. First, the over-delivery of impressions may result in an early end to an advertising campaign because the number of impressions delivered may meet its target goal too early in given time period. For example, if JIGA contracts to deliver 175,000 impressions over a six-week period, and delivers 50,000 impressions in the first week, the campaign may have to end early because it will be difficult to effectively spread the remaining 100,000 impressions over the remaining three weeks. Second, the over-delivery of impressions may prevent other advertisements from being delivered thereby interfering with other delivery contracts and reducing other revenue streams.

SUMMARY OF THE INVENTION

[0006] A method for correcting impression flow to a gaming environment, is provided and includes determining a number of available impressions for delivery to at least one content cell in the gaming environment for a desired time period, determining a number of available users for the gaming environment for the desired time period, generating a target number of impressions to be delivered to the gaming environment for a predefined portion of the desired time period and generating a weighting value for the at least one content cell responsive to said target number of impressions.

[0007] A system for implementing a method for correcting impression flow to a gaming environment is provided, wherein the system includes a network having a database and a gaming device connected to the network and configured to operate in a gaming environment, wherein at least one of the gaming device and the network includes a means for determining a number of available impressions for delivery to at least one content cell in the gaming environment for a desired time period, determining a number of available users for the gaming environment for the desired time period, generating a target number of impressions to be delivered to the gaming environment for a predefined portion of the desired time period and generating a weighting value for the at least one content cell responsive to said target number of impressions.

[0008] A computer readable storage medium having computer executable instructions for implementing a method for correcting impression flow to a gaming environment is provided, wherein the method includes determining a number of available impressions for delivery to at least one content cell in the gaming environment for a desired time period, determining a number of available users for the gaming environment for the desired time period, generating a target number of impressions to be delivered to the gaming environment for a predefined portion of the desired time period and generating
a weighting value for the at least one content cell responsive to said target number of impressions.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The foregoing and other features and advantages of the present invention will be more fully understood from the following detailed description of illustrative embodiments, taken in conjunction with the accompanying figures in which like elements are numbered alike:

[0010] FIG. 1 is a high level schematic block diagram illustrating one embodiment of a gaming system, in accordance with the present invention.

[0011] FIG. 2 is a lower level schematic block diagram illustrating the integration server of the embodiment of the gaming system of FIG. 1, in accordance with the present invention.

[0012] FIG. 3 is a block diagram illustrating a method for generating impression numbers, in accordance with the present invention.

DETAILED DESCRIPTION

[0013] In-Game Advertising (IGA) typically involves placing product advertisement impressions into a game space in a manner similar to that used for real time, real space advertisements. To ensure that an impression is not over-delivered or under-delivered to the game space, impression delivery has to be controlled to deliver the desired impression to an area of the game space a correct number of times as may be requested by an advertiser.

[0014] In accordance with the present invention, one embodiment for controlling content delivery involves employing a dynamic method of weighting impressions to automatically and dynamically adjust the delivery of impressions for an advertising campaign. Thus, as an advertising campaign is running, the impression flow to the game space is monitored and corrected to ensure that the impression delivery remains on target as requested by the advertiser. In this way, advertising impressions are never over-delivered or under-delivered to a user. Although one way this may be accomplished involves matching content type (such as ad type, aspect ratio and/or file format) to the placeholder into which the advertisement impression is to be shown, without more advanced features this approach is insufficient. The present invention provides these advanced features and allows for more advanced planning such as interlaced inventory placement (ensuring an even distribution of different content items throughout a game), distributed time-based delivery targets (delivering a specific number of impressions spread out over a time range or interval) and Share-of-Voice delivery (delivering to a percentage of the total inventory) which may employ a much more complicated mechanism for determining which content item to display. It is contemplated that any type of advertising content may be implemented with the invention, including but not limited to 3-Dimensional and/or holographic content.

[0015] In accordance with the present invention, a process which employs a combination of adjustable weighting and random selection techniques with a feedback loop to achieve advanced planning features is provided, wherein the term feedback loop is used to indicate the fact that the weight value may be adjusted dynamically as desired. For example, the weight value may be adjusted based on the actual performance of a campaign and may be determined by the impression data that is received by the integration system servers. By using random selection and relying on the laws of probability of large numbers, if a specific placeholder inside of a game space can contain three possible different content items, then it can be determined with some certainty that each content item will be delivered at least one-third of the time. As such, this allows for the enablement of an interlaced inventory placement feature which ensures that every content item will be delivered during an advertising campaign. And adding a weighting system allows for the capability to influence the random selection process by making one or more items more likely to be selected over the other items.

[0016] Consider the situation where a placeholder inside of a game space has three possible content items, where one content item is assigned a weighted value of “10” while the other two content items are each assigned a weighted value of “5” and where a random value is selected based on a total weighted value as desired, for example a total weighted value equal to “20.” Thus, in this case the selected random value is between “1” and “20” inclusive, where a value between “1” and “10” selects the first item, a value between “11” and “15” selects the second item and a value between “16” and “20” selects the third item. It should be appreciated that the random value may be generated using any method and/or device suitable to the desired end purpose, such as random number generator. Statistically, it can be seen that the first item will typically be selected about twenty-five percent of the time, while each of the other items will typically be selected about twenty-five percent of the time. Adjusting these weighted values over time based on past delivery results (i.e. feedback) allows for the evaluation of a specific piece of content and the determination of whether that specific piece of content needs to be delivered more or less frequently in order to reach a targeted number of impressions over a specific time period.

[0017] In accordance with the present invention, each content item may have at least one weighted value associated with it, wherein the weighted value may be adjusted based on one or more desired characteristics, such as the actual performance of a campaign and/or a forecasted performance of a campaign. As such, the weighted value may take into account all campaigns being delivered, including campaigns that are delivering content into only one specific title. Moreover, frequency capping may be used to limit the number of views per user/per time period, where the frequency cap value may be specified either before or after an advertising campaign is created and/or implemented. If desired, the frequency cap value may be used in the calculations to control or limit the number of views communicated to an individual user. Accordingly, the frequency cap value may be a value that indicates the maximum number of impressions that any individual user should see for a specified period regardless of the game title or content type. For example, if research (or other acceptable method) determines that a user becomes desensitized to an advertisement after viewing the impression 5 times over a one week period, the frequency cap value could be used to limit the impression views per individual user to 5 impressions per user/per week. Another example would be if an advertisement is to be targeted only to an age group of between 18-20 years the frequency cap value for age groups outside of this demographic could be set to “0” while the frequency cap value for age groups inside of this demographic could be set to a higher value as desired.

[0018] The weighted values may also be based on a plurality of parameters as desired, such as impression type, title,
geographic market and/or soft limit (i.e. frequency cap). These parameters may then be arranged in a table of impressions which includes a corresponding number of content types, geographic markets, and soft limits (frequency cap) on the number that should be seen by any individual during a specified time period. The number of available users (i.e. users playing the game who are going to are generating impressions—may be determined as desired, such as by historical/forecast data) and impressions in a specific time period (such as, one day) may then be determined for various situations, such as 1) each combination of Market, Title, and Type, 2) each combination of Market and Title, 3) each combination of Market and Type and 4) each Market. The Market, Title and Type may be dictated by the client, wherein the Market may refer to a specific geographic location (area) that an advertising campaign is intended to be delivered to, the Title may refer to a specific category of advertising, such as Billboard, Logo, Video, Audio, etc. The available impression numbers may then be determined, where one embodiment for determining available impression numbers involves (1) determining the number of expected users for a time period for each combination specified using historical and/or forecasted (predicted) data; (2) applying a confidence value to both the number of expected users and each combination, and (3) combining the values from (1) and (2) and then multiplying these values by the determined frequency cap.

[0019] It should be appreciated that although the concepts as discussed herein are discussed with regards to a gaming environment as follows, any type of gaming environment or configuration may be used. Referring to FIG. 1, one embodiment of a gaming system 10 for implementing the method of the invention showing the connectivity between the elements is shown and includes a user gaming device 20 having gaming software 30 and application software (SDK) 40, a gaming server 50 (optional) and an integration server 60 which includes advertiser information 70. During gameplay, the gaming software 30 communicates with the gaming server 50 (optional) to facilitate the gameplay and the SDK 40 communicates with the integration server 60 to facilitate the integration of advertising content. Referring to FIG. 2, a lower level block diagram illustrating the elements of the integration server 60. As shown, the interaction with the integration server 60 is illustrated by a first set of arrows 75 which represents the flow of impressions through the integration server 60, a second set of arrows 80 which represents the flow of advertising content through the integration server 60 and a third set of arrows 85 which represents the flow of control messages (i.e. figuring out a user location, start session message, etc.) through the integration server 60.

[0020] Referring to FIG. 3, a block diagram illustrating one embodiment of a method 200 for correcting impression flow is shown and includes determining the number of impressions that should be delivered to each cell in a game title (wherein the cell specifies the impression type) for an desired time period, as shown in operational block 202. The impression values may be broken down as desired, such as by target market. The available users/impressions for the desired Market, Title, Type (as may be specified by the cell) and/or any desired combination thereof are then retrieved, as shown in operational block 204. The number of impressions to be delivered to the Market for a given game Title and/or Type is retrieved, as shown in operational block 206, and the number of impressions already delivered for the campaign to the Market, Title, Type and/or any desired combination thereof is retrieved, as shown in operational block 208.

[0021] At this point, the number of impressions left to be delivered in the campaign for the Market, Title and/or Type combination (i.e. required minus delivered) is then determined, as shown in operational block 210. In accordance with the invention, the number of impressions left to be delivered in the campaign may be calculated, estimated and/or predicted. The target number of impressions needed per time period (remaining impressions to be delivered divided by the time periods left in the campaign) is then determined, as shown in operational block 212. The target number of impressions needed per time period is then compared with the number of available impressions for the time period for the Market, Title, and/or Type combination and/or the Market and Title combination, as shown in operational block 114. If the target number of impressions is greater than either available amount (or the difference between either grows over a period of time), then this is an indication that the requirements of the campaign may not be met by the end of the campaign with the specified frequency cap, and thus can be used as an early warning that either more inventory is needed and/or the campaign targets should be modified.

[0022] However, if the target number of impressions is less than the available impressions, then the target number of impressions is set to the number of available impressions, as shown in operational block 216. A “cell factor” may be determined and introduced, as shown in operational block 218, wherein one embodiment of the “cell factor” is the target value of impressions divided by the number of available impressions for the Market and Type combination. It should be appreciated that the number of available impressions may be determined by retrieving the number of available users for each cell in a title for the Market and multiplying this number by the frequency cap. This results in the number of available impressions for that cell. The impression goal for a particular cell for a campaign may then be determined by multiplying the number of impressions available for the cell by the “cell factor,” as shown in operational block 220, where the impression goal for that particular cell for the campaign may be a proportion of the available impressions for the cell which will be allocated to the campaign. The weighting value for each Market, Content Item, and/or Cell combination may then be determined, as shown in operational block 222. One embodiment for accomplishing this for each cell in a title that the campaign is targeted to involves dividing the impression goal for that cell by the number of content items that can be delivered into that cell. This value is the weighting value and can be used to ensure that each content item has an equal chance of being shown in that Market and Cell.

[0023] Accordingly, the above relationships can be expressed using the equations as follows:

\[
\text{Avail}_{i,c} = \text{UU}_{i,c} \times FC_{i,c}\\
\text{Avail}_{i} = \text{UU}_{i} \times FC_{i}\\
IG_{i,c} = \text{Avail}_{i,c} \times \text{IT}_{i,c} \times \text{ID}_{i,c}\\
IG_{i} = \text{Avail}_{i} \times \text{IT}_{i} \times \text{ID}_{i} / \text{TP} / \text{Avail}_{i,c}
\]

wherein, \(c\) is a specific campaign, \(i\) is a specific cell, \(m\) is a specific market, \(t\) is a specific ad type, \(FC_{i,c}\) is the frequency cap for the specific campaign, \(\text{UU}_{i,c}\) is the number of unique
users for the specific market and ad type, \( UU_i \) is the number of unique users for the specific cell, \( IT_{ij} \) is the total target impressions for the specific campaign and ad type, \( ID_{ij} \) is the number of impressions already delivered for the specific campaign and ad type, \( TP_j \) is the number of time periods remaining in the campaign and \( IG_{ij} \) is the impression goal for the campaign and cell.

It should be appreciated that historical data may be retrieved from a database of impressions that the network has already received and stored. However, before a title is released (1 day) is required for cataloging, so the “confidence” level in the accuracy of any historical data regarding that title is practically 0%, and the number of available impressions is taken directly from forecasting methods (where the confidence level is typically 100%). After a title has been released and actual impressions from it are received, the “confidence” level in the accuracy of the historical data grows and less reliance is placed on forecasting methods to predict what the title will be able to deliver.

In accordance with the present invention, one embodiment of the method disclosed hereinbefore is described in terms of the following example. Consider the situation where there are two (2) campaigns: Campaign A and Campaign B. Campaign A is required to be delivered to Market M with a frequency cap of seven (7) impressions per user per week. It should deliver 100,000 Billboard impressions and 150,000 Logo impressions to Title T and 75,000 Billboard impressions to Title U over a 10 week period. Campaign A includes two Billboard content items (\( A_1 \) and \( A_2 \)), and one Logo content item (\( A_L \)). On the other hand, Campaign B is required to be delivered to Market M with a frequency cap of ten (10) impressions per user per week. It should deliver 50,000 Billboard impressions to Title T and 25,000 Billboard impressions to Title U over a 5 week period (i.e. 35 days). Campaign B includes one Billboard content item (\( B_1 \)). Additionally, Title T includes one (1) Billboard Cell (X) and one (1) Logo Cell (Y) and Title U includes one (1) Billboard Cell (Z). Furthermore, assume that both Campaign A and Campaign B are started on the same date and two (2) weeks (i.e. 14 days) of impressions have already been delivered to both campaigns.

In accordance with the invention, the number of available users and impressions in a specific time period (such as one (1) day) is determined for each combination of Market, Title and Type; each combination of Market and Title, each combination of Market and Type and/or each Market. It should be noted that although they can be, these numbers are typically not calculated by summing since a single user may see multiple types of advertisements, use multiple game titles and/or may appear in multiple markets, where the frequency should still apply across content types, game titles and markets for any individual user. In this case, the number of impressions are calculated by determining the number of expected users for the time period for each combination specified using historical and/or forecasted data, applying a confidence value to both, combining them and then multiplying by the frequency cap value specified. For this example, assume that the time period is one (1) day and that from a combination of historical (e.g. impressions stored in a database) and forecast methods, the following is known that on average a day (i.e. our time period):

\[ 0027 \] Combination of Market, Title and Type

In Market M, Title T will deliver on average 50,000 Billboard impressions to 13,000 unique users and 100,000 Logo impressions to 20,000 unique users and in Market M, Title U will deliver on average 250,000 Billboard impressions to 30,000 unique users and 0 Logo impressions to 0 unique users.

\[ 0029 \] Combination of Market and Title

In Market M, Title T will deliver on average a total of 150,000 impressions to 20,000 unique users (Note that the unique users value may not equal the sum of the Billboard uniqueness and Logo uniqueness indicating that 3,000 users saw only Billboards, 7,000 users saw only Logos, and 10,000 users saw both Billboards and Logos) and in Market M, Title U will deliver on average a total of 250,000 impressions to 30,000 unique users.

\[ 0031 \] Combination of Market and Type

In Market M, on average a total of 300,000 Billboard impressions will be delivered to 40,000 unique users (Note again that this may indicate that 10,000 users played only Title T, 27,000 users played only Title U, and 3,000 users played both titles T and U) and in Market M, on average a total of 100,000 Logo impressions will be delivered to 17,000 unique users.

\[ 0033 \] Each Market

In Market M, on average a total of 400,000 impressions will be delivered to 50,000 unique users.

Moreover, assume that from historical data it is already known that for Campaign A: delivery of 20,000 Billboard impressions and 30,000 Logo impressions to Title T and 10,000 Billboard impressions to Title U has already occurred and for Campaign B: delivery of 15,000 Billboard impressions to Title T and 5,000 Billboard impressions to Title U has already occurred.

In accordance with the present invention, the available impressions and users can be determined by determining the number of impressions that should be delivered to each cell in a game title for the time period, broken down by target market. This may be accomplished by retrieving the available users for the combination of Market, Title, and Type, the combination of Market and Title, and/or the combination of Market and Type and calculating the available impressions by multiplying by the specified frequency cap. For example, Available impressions = Available users*Frequency Cap. Moreover, the number of impressions required to be delivered for the campaign to the Market for the Game Title and Type and the number of impressions already delivered for the campaign to the Market, Game Title and Type combination are retrieved. The number of impressions left to be delivered in the campaign for the Market, Title and Type combination are then determined (i.e. required impressions-delivered impressions) along with the target number of impressions needed per time period (i.e. divide by time periods left in the campaign).

The target number of impressions needed is then compared against the number of available impressions for the time period for the Market, Title and Type combination and/or the Market and Title combination. And if the target number of impressions is greater than either available amount (or the difference between either grows over a period of time), then this can be viewed as an indication that the campaign requirements may not be met at the end of the campaign with the specified frequency cap and may be used as an ‘early warning’ that more inventory may be needed or that the campaign targets need to be modified. On the other hand, if the target number of impressions is greater than the available impressions, then the target number of impressions may be set to the
number of available impressions. The ‘cell factor’ is then determined by dividing the target value by the number of available impressions for the Market and Type combination, wherein available impressions for a cell is the number of available users for each cell in a title for the Market multiplied by the specified frequency cap. The impression goal for a particular cell for the campaign (which may be a proportion of the available impressions for the cell which will be allocated to the campaign) can be determined by multiplying the ‘cell factor’ by the number of impressions available for the cell.

To continue the example with Campaign A and Campaign B, using the above approach gives the following results:

Campaign A

For Market M, Title T, Billboards:

- Available Users by Market/Title/Type=13,000;
- Available Impressions by Market/Title/Type=13,000*(Freq Cap)=91,000;
- Available Users by Market/Title=20,000;
- Available Impressions by Market/Title=20,000*(Freq Cap)=140,000;
- Available Users by Market/Type=40,000;
- Available Impressions by Market/Type=40,000*(Freq Cap)=280,000;
- Impressions required=75,000;
- Impressions already delivered=10,000;
- Impressions left to be delivered=65,000;
- Time period in Campaign=70 days=14 days=56 days;
- Impressions required per day=65,000/56=1,161.

As above, if the number of impressions required is less than the number of available impressions for both Market/Title/Type and Market/Title, then the campaign should be able to successfully deliver that number. In this case, the number of available impressions for Market/Title/Type=210,000, the number of impressions available for Market/Title=210,000 and the number of (remaining) impressions required=65,000. Thus, the number of remaining impressions required is less than both the number of impressions available for Market/Title and the number of available impressions for Market/Title/Type. Accordingly,

- Target Value=1,161; and
- Cell Factor=1,161/280,000=0.0041.

And since there is only one billboard cell (Z) in title T and the number of available impressions for the billboard cell (Z) for the Market/Title is 210,000, then the impression goal for Campaign A, Cell Z is given by:

- Impression Goal for Campaign A, Cell Z=210,000*0.0041=861.

For Market M, Title T, Logos:

- Available Users by Market/Title/Type=20,000;
- Available Impressions by Market/Title/Type=20,000*(Freq Cap)=140,000;
- Available Users by Market/Title=20,000;
- Available Impressions by Market/Title=20,000*(Freq Cap)=140,000;
- Available Users by Market/Type=17,000;
- Available Impressions by Market/Type=17,000*(Freq Cap)=119,000;
- Impressions required=150,000;
- Impressions already delivered=30,000;
- Impressions left to be delivered=120,000;
- Time period in Campaign=70 days=14 days=56 days;
- Impressions required per day=120,000/56=2,143.

As above, if the number of impressions required is less than the number of available impressions for both Market/Title/Type and Market/Title, then the campaign should be able to successfully deliver that number. In this case, the number of available impressions for Market/Title/Type=140,000, the number of impressions available for Market/Title=140,000 and the number of (remaining) impressions required=120,000. Thus, the number of remaining impressions required is less than both the number of impressions available for Market/Title and the number of available impressions for Market/Title/Type. Accordingly,

- Target Value=2,143; and
- Cell Factor=2,143/119,000=0.0180.

And since there is only one logo cell (Y) in title T and the number of available impressions for the logo cell (Y) for the Market/Title is 140,000, then the impression goal for Campaign A, Cell Y is given by:
[0086] Impression Goal for Campaign A, Cell Y=140,000*0.0180–2,520.

Campaign B

[0087] Market M, Title T, Billboards:
[0088] Available Users by Market/Title/Type=13,000;
[0089] Available Impressions by Market/Title/Type=13,000*(Freq Cap) 10=130,000;
[0090] Available Users by Market/Title=20,000;
[0091] Available Impressions by Market/Title=20,000*(Freq Cap) 10=200,000;
[0092] Available Users by Market/Title=40,000;
[0093] Available Impressions by Market/Title=40,000*(Freq Cap) 10=400,000;
[0094] Impressions required=50,000;
[0095] Impressions already delivered=15,000;
[0096] Impressions left to be delivered=50,000–15,000=35,000;
[0097] Time period left in Campaign=35 days–14 days=21 days;
[0098] Impressions required per day=35,000/21=1,667.
[0099] As above, if the number of impressions required is less than the number of available impressions for both Market/Title/Type and Market/Title, then the campaign should be able to successfully deliver that number. In this case, the number of available impressions for Market/Title/Type=130,000, the number of impressions available for Market/Title=200,000 and the number of (remaining) impressions required=35,000. Thus, the number of remaining impressions required is less than both the number of impressions available for Market/Title and the number of available impressions for Market/Title/Type. Accordingly,
[0100] Target Value=1,667;
[0101] Cell Factor=1,667/400,000=0.0041;
And since there is only one billboard cell (X) in title T and the number of available impressions for the billboard cell (X) for the Market/Title/Type is 130,000, then the impression goal for Campaign B, Cell X is given by:
[0102] Impression Goal for Campaign B, Cell X=130,000*0.0041=533.
[0103] Market M, Title U, Billboards:
[0104] Available Users by Market/Title/Type=30,000;
[0105] Available Impressions by Market/Title/Type=30,000*(Freq Cap) 10=300,000;
[0106] Available Users by Market/Title=30,000;
[0107] Available Impressions by Market/Title=30,000*(Freq Cap) 10=300,000;
[0108] Available Users by Market/Title=40,000;
[0109] Available Impressions by Market/Title=40,000*(Freq Cap) 10=400,000;
[0110] Impressions required=25,000;
[0111] Impressions already delivered=5,000;
[0112] Impressions left to be delivered=25,000–5,000=20,000;
[0113] Time period left in Campaign=35 days–14 days=21 days;
[0114] Impressions required per day=20,000/21=952.
[0115] As above, if the number of impressions required is less than the number of available impressions for both Market/Title/Type and Market/Title, then the campaign should be able to successfully deliver that number. In this case, the number of available impressions for Market/Title/Type=300,000, the number of impressions available for Market/Title=500,000 and the number of (remaining) impressions required=20,000. Thus, the number of remaining impressions required is less than both the number of impressions available for Market/Title and the number of available impressions for Market/Title/Type. Accordingly,
[0116] Target Value=952;
[0117] Cell Factor=952/400,000=0.0024;
And since there is only one billboard cell (Z) in title U and the number of available impressions for the billboard cell (Z) for the Market/Title/Type is 300,000, then the impression goal for Campaign B, Cell Z is given by:
[0118] Impression Goal for Campaign B, Cell Z=300,000*0.0024=720.
[0119] The weighting value for each Market, Content Item, and Cell combination is then determined for each cell in a title that the campaign is targeted to by dividing the impression goal for that cell by the number of content items that can be delivered into that cell. This weighting value is representative of the statistical probability that the content item will be delivered to that cell and assures that each content item has an equal chance to be shown in that Market and Cell. Thus, the weighting values for the above example is as follows:

Campaign A

[0121] For Market M, Content A2, Cell X: Weight=464/2=232;
[0122] For Market M, Content A3, Cell Y: Weight=2,520/1=2,520;
[0123] For Market M, Content A1, Cell Z: Weight=861/2=430.5;

Campaign B

[0125] For Market M, Content B1, Cell X: Weight=533/1=533;
[0127] It should be appreciated that the method of the present invention may be embodied, in whole or in part, via software, firmware and/or hardware. Moreover, the application software may be implemented via any type or configuration of software suitable to the desired end purpose, such as a generic SDK and/or an application specific SDK. Furthermore, the software application may be embedded, in whole or in part. Additionally, the method of the present invention may be embodied, in whole or in part, via instruction using training manuals (i.e. text based materials), seminars, classes, and/or any other media suitable to the desired end purpose. Moreover, although the method of the present invention may be implemented, in whole or in part, via software, hardware, firmware and/or any combination thereof, it is also contemplated that the method of the present invention may also be implemented, in whole or in part, without the use of software, hardware, firmware and/or any combination thereof. For example, without the full or partial use of any software, hardware and/or firmware and/or with any combination thereof, but rather via instruction using PC based software and/or classroom instruction with text materials (i.e. books, pamphlets, handouts, tapes, optical media, etc.).
[0128] Moreover, each of the elements of the present invention may be implemented in part, or in whole, in any order
suitable to the desired end purpose. In accordance with an exemplary embodiment, the processing required to practice the method of the present invention, either in whole or in part, may be implemented, wholly or partially, by a controller operating in response to a machine-readable computer program. In order to perform the prescribed functions and desired processing, as well as the computations therefore (e.g., execution control algorithm(s), the control processes prescribed herein, and the like), the controller may include, but not be limited to, a processor(s), computer(s), memory, storage, register(s), timing, interrupt(s), communication interface(s), and input/output signal interface(s), as well as combination comprising at least one of the foregoing. It should also be appreciated that the embodiments disclosed herein are for illustrative purposes only and include only some of the possible embodiments contemplated by the present invention.

Furthermore, the invention may be wholly or partially embodied in the form of a computer system or controller implemented processes. It should be appreciated that any type of computer system (as is well known in the art) and/or gaming system may be used and that the invention may be implemented via any type of network setup, including but not limited to a LAN and/or a WAN (wired or wireless). The invention may also be embodied in the form of a computer program code containing instructions embodied in tangible media, such as floppy diskettes, CD-ROMs, hard drives, and/or any other computer-readable medium, wherein when the computer program code is loaded into and executed by a computer or controller, the computer or controller becomes an apparatus for practicing the invention. The invention can also be embodied in the form of a computer program code, for example, whether stored in a storage medium, loaded into and/or executed by a computer or controller, or transmitted over some transmission medium, such as over electrical wiring or cabling, through fiber optics, or via electromagnetic radiation, wherein when the computer program code is loaded into and executed by a computer or controller, the computer or controller becomes an apparatus for practicing the invention. When implemented on a general-purpose microprocessor the computer program code segments may configure the microprocessor to create specific logic circuits.

While the invention has been described with reference to an exemplary embodiment, it should be understood by those skilled in the art that various changes may be made and equivalents may be substituted for elements thereof without departing from the scope of the invention. In addition, many modifications may be made to adapt a particular situation or material to the teachings of the invention without departing from the scope thereof. Therefore, it is intended that the invention not be limited to the particular embodiment disclosed as the best mode contemplated for carrying out this invention, but that the invention will include all embodiments falling within the scope of the appended claims. Moreover, unless specifically stated any use of the terms first, second, etc. do not denote any order or importance, but rather the terms first, second, etc. are used to distinguish one element from another.

We claim:
1. A method for correcting impression flow to a gaming environment, comprising:
   determining a number of available impressions for delivery to at least one content cell in the gaming environment for a desired time period;
   generating a target number of impressions to be delivered to the gaming environment for a predefined portion of the desired time period; and
   generating a weighting value for the at least one content cell responsive to said target number of impressions.

2. The method of claim 1, wherein said determining a number of impressions includes determining a number of impressions for each of a Market/Title/Type, a Market/Title and a Market/Type.

3. The method of claim 1, wherein said determining a number of available users includes determining a number of users for each of a Market/Title/Type, a Market/Title and a Market/Type.

4. The method of claim 1, wherein said generating a target number of impressions includes determining a number of impressions to be delivered to the gaming environment for at least a portion of the desired time period.

5. The method of claim 4, wherein said determining a target number of impressions includes calculating said target number of impressions by dividing said number of impressions to be delivered to the gaming environment for at least a portion of the desired time period by said at least a portion of the desired time period.

6. The method of claim 5, wherein said desired time period is a plurality of days and said predefined portion of the desired time period is equal to one day.

7. The method of claim 1, wherein said generating a weighting value includes calculating a cell factor by dividing said target number of impressions by a number of impressions for a Market/Type.

8. The method of claim 1, wherein said determining a number of impressions includes determining a number of impressions for each of a Market/Title/Type, a Market/Title and a Market/Type and multiplying each of said number of impressions for each by a desired frequency cap.

9. A system for implementing a method for correcting impression flow to a gaming environment, the system comprising:
   a network having a database; and
   a gaming device connected to the network and configured to operate in a gaming environment, wherein at least one of the gaming device and the network includes a means for,
   determining a number of available impressions for delivery to at least one content cell in the gaming environment for a desired time period;
   determining a number of available users for the gaming environment for the desired time period;
   generating a target number of impressions to be delivered to the gaming environment for a predefined portion of the desired time period; and
   generating a weighting value for the at least one content cell responsive to said target number of impressions.

10. The method of claim 9, wherein said determining a number of impressions includes determining a number of impressions for each of a Market/Title/Type, a Market/Title and a Market/Type.

11. The method of claim 9, wherein said determining a number of available users includes determining a number of users for each of a Market/Title/Type, a Market/Title and a Market/Type.
12. The method of claim 9, wherein said generating a target number of impressions includes determining a number of impressions to be delivered to the gaming environment for at least a portion of the desired time period.

13. The method of claim 12, wherein said generating a target number of impressions includes calculating said target number of impressions by dividing said number of impressions to be delivered to the gaming environment for at least a portion of the desired time period by said at least a portion of the desired time period.

14. The method of claim 13, wherein said desired time period is a plurality of days and said predefined portion of the desired time period is equal to one day.

15. The method of claim 9, wherein said generating a weighting value includes calculating a cell factor by dividing said target number of impressions by a number of impressions for a Market/Type.

16. The method of claim 9, wherein said determining a number of impressions includes determining a number of impressions for each of a Market/Title/Type, a Market/Title and a Market/Type and multiplying each of said number of impressions for each by a desired frequency cap.

17. A computer readable storage medium having computer executable instructions for implementing a method for correcting impression flow to a gaming environment, the method comprising:

determining a number of available impressions for delivery to at least one content cell in the gaming environment for a desired time period;
determining a number of available users for the gaming environment for the desired time period;
generating a target number of impressions to be delivered to the gaming environment for a predefined portion of the desired time period; and
generating a weighting value for the at least one content cell responsive to said target number of impressions.

18. The computer readable storage medium of claim 17, wherein said determining a number of impressions includes determining a number of impressions for each of a Market/Title/Type, a Market/Title and a Market/Type.

19. The computer readable storage medium of claim 17, wherein said determining a number of available users includes determining a number of users for each of a Market/Title/Type, a Market/Title and a Market/Type.

20. The computer readable storage medium of claim 17, wherein said generating a target number of impressions includes determining a number of impressions to be delivered to the gaming environment for at least a portion of the desired time period.

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