[5a] In a first aspect, the present disclosure provides a computer-implemented method for determining an effectiveness of an electronic advertisement, the method comprising, at a server: i. sending an electronic communication to a user device associated with a user, the electronic communication including downloadable access to the electronic advertisement; ii. generating an acknowledgement time stamp identifying at which time the electronic communication was sent to the user device; iii. receiving a notification message, generated by the user device, in response to the electronic advertisement being downloaded at the user device; iv. generating a unique identifier and a download time stamp in response to the download of the electronic advertisement, the unique identifier identifying the user device, and the download time stamp identifying a time at which the electronic advertisement was downloaded; v. receiving transaction data relating to a transaction initiated by the user using the downloaded electronic advertisement, the transaction data indicating the electronic advertisement has been used to initiate the transaction and including the unique identifier and a transaction time stamp identifying when the transaction was initiated by the user using the downloaded electronic advertisement, wherein the transaction data includes one or more of: a merchant category code, an industry code, and, merchant information; vi. determining a first component of a relevance score of the electronic advertisement for the user based on comparing a first predetermined time period against a first time period between the acknowledgement time stamp and the download time stamp, wherein, with the first time period being less than the first predetermined time period, and the first component is assigned a positive score, wherein, with the first time period being greater than the first predetermined time period, the first component is assigned a negative score, and wherein, the positive score is higher than the negative score; vii. determining a second component of the relevance score of the electronic advertisement for the user based on comparing a second predetermined time period against a second time period between the download time stamp and the transaction time stamp, wherein, with the second time period being less than the second predetermined time period, the second component is assigned a secondary positive score, wherein, with the second time period being greater than the second predetermined

time period, the second component is assigned a secondary negative score, and, wherein, the secondary positive score is greater than the secondary negative score; viii. combining the first and second components in determining the relevance score; repeating steps i.-viii. for a plurality of users; ranking the users based on the relevance scores to identify high ranking users having relevance scores above a determined threshold; identifying profile characteristics of the high ranking users based on the transaction data associated with the high ranking users, wherein the profile characteristics including, for each of the high ranking users, one or more of: the merchant category codes, the industry codes, and, the merchant information; identifying candidate users having similar profile characteristics to the identified profile characteristics of the high ranking users based on merchant categories, industry codes, and merchant information of transactions completed by the candidate users; storing on a database, an association of each of the identified candidate users, the respective identified similar profile characteristics, and a mode of electronically delivering electronic advertisements to the respective candidate user; and identifying electronic advertisements similar to the electronic advertisement, based on similarity of the identified profile characteristics of the users and the identified similar profile characteristics of the candidate users, for sending to the candidate users via the stored modes of electronically delivering electronic advertisements.

[5b] In a second aspect, the present disclosure provides an apparatus for determining an effectiveness of an electronic advertisement, the apparatus comprising: at least one processor; and at least one memory including computer program code; the at least one memory and the computer program code configured to, with at least one processor, cause the apparatus at least to: i. send an electronic communication to a user device associated with a user, the electronic communication including downloadable access to the electronic advertisement; ii. generate an acknowledgement time stamp identifying at which time the electronic communication was sent to the user device; iii. receive a notification message, generated by the user device, in response to the electronic advertisement being downloaded at the user device; iv. generate an unique

identifier and a download time stamp in response to the download of the electronic advertisement, the unique identifier identifying the user device and the download time stamp identifying a time at which the electronic advertisement was downloaded; v. receive transaction data when settling a transaction initiated by the user using the downloaded electronic advertisement, the transaction data indicating the electronic advertisement has been used to initiate the transaction and including the unique identifier and a transaction time stamp identifying when the transaction was initiated by the user using the downloaded electronic advertisement, wherein the transaction data includes one or more of: a merchant category code, an industry code, and, merchant information; vi. determine a first component of a relevance score of the electronic advertisement for the user based on comparing a first predetermined time period against a first time period between the acknowledgement time stamp and the download time stamp, wherein, with the first time period being less than the first predetermined time period, the first component is assigned a positive score, wherein with the first time period being greater than the first predetermined time period, the first component is assigned a negative score, and, wherein, the positive score is higher than the negative score; vii. determine a second component of the relevance score of the electronic advertisement for the user based on comparing a second predetermined time period against a second time period between the download time stamp and the transaction time stamp, wherein, with the second time period being less than the second predetermined time period, the second component is assigned a secondary positive score, wherein, with the second time period being greater than the second predetermined time period, the second component is assigned a secondary negative score, and, wherein, the secondary positive score is greater than the secondary negative score; viii. combine the first and second components in determining the relevance score; repeat steps i.-viii. for a plurality of users; rank the users based on the relevance scores to identify high ranking users having relevance scores above a determined threshold; identify profile characteristics of the high ranking users based on the transaction data associated with the high ranking users, wherein the profile characteristics including, for each of the high ranking users, one or more of: the merchant category codes, the industry codes, and the merchant information; identify candidate users

having similar profile characteristics to the identified profile characteristics of the high ranking users based on merchant categories, industry codes, and merchant information of transactions completed by the candidate users; store on a database, an association of each of the identified candidate users, the respective identified similar profile characteristics, and a mode of electronically delivering electronic advertisements to the respective candidate user; and identify electronic advertisements similar to the electronic advertisement, based on similarity of the identified profile characteristics of the users and the identified similar profile characteristics of the candidate users, for sending to the candidate users via the stored modes of electronically delivering electronic advertisements.

[6] According to the first embodiment of the disclosure, a computer-implemented method for determining an effectiveness of an electronic advertisement received at a user device is provided, the method comprising, at a server:

receiving a notification message in response to the electronic advertisement being downloaded at the user device;

generating a unique identifier and a time stamp in response to the download of the electronic advertisement, the unique identifier identifying the user device, and the time stamp identifying a time at which the electronic advertisement is downloaded; and

receiving transaction data relating to a transaction initiated by the user using the downloaded electronic advertisement, the transaction data indicating the electronic advertisement has been used and including the unique identifier and the time stamp;

determining the effectiveness of the electronic advertisement based on the transaction data and a relevance score of the user, the relevance score indicating the relevance of the electronic advertisement to the user.

[7] In an embodiment, the step of determining the effectiveness of the electronic advertisement comprises determining a transaction time period between the time, identified by the time stamp, at which the electronic advertisement is downloaded and a time at which the

transaction is initiated by the user, wherein the relevance score indicates the relevance of the electronic advertisement to the user based on the determined transaction time period.

[8] In an embodiment, the step of determining the effectiveness of the electronic advertisement comprises: determining an acknowledgement time period between (i) an acknowledgement time stamp at which the electronic advertisement is sent from the server to the user device and (ii) a time at which the transaction is initiated by the user, wherein the relevance score indicates the relevance of the electronic advertisement to the user based on the determined acknowledgement time period.

[9] In an embodiment, the method further comprises determining a downloaded time period between the acknowledgement time stamp and the time, identified by the time stamp, at which the electronic advertisement is downloaded, wherein the relevance score indicates the relevance of the electronic advertisement to the user based on the determined downloaded time period.

[10] In an embodiment, the method further comprises determining an effectiveness of the electronic advertisement to a further user via a further user device; ranking the users based on the relevance scores of the users, wherein the step of determining the effectiveness of the electronic advertisement comprises:

identifying profile characteristics of each of the users based on the transaction data in response to the ranked relevance scores.

[11] In an embodiment, the electronic advertisement is an email.

[12] According to the second embodiment of the disclosure, an apparatus for determining an effectiveness of an electronic advertisement to a user via a user device is provided, the apparatus comprising: at least one processor; and

at least one memory including computer program code;

the at least one memory and the computer program code configured to, with at least one processor, cause the apparatus at least to:

receive a notification message in response the electronic advertisement being downloaded at the user device; generate an unique identifier and a time stamp in response to downloading the electronic advertisement, the unique identifier identifying the user device and the time stamp identifying a time at which the electronic advertisement is downloaded; and

relevance of the electronic advertisement to the user based on the determined downloaded time period.

[16] In an embodiment, the transaction data identifies a mode of payment used to settle the transaction, the mode of payment comprising at least a cash payment.

[17] According to a third embodiment of the disclosure, a computer-readable storage medium is provided, the computer-readable storage medium having stored thereon computer program code which when executed by a computer causes the computer to execute a method in accordance with any one of the above.

BRIEF DESCRIPTION OF THE DRAWINGS

[18] The accompanying figures, where like reference numerals refer to identical or functionally similar elements throughout the separate views and which together with the detailed description below are incorporated in and form part of the specification, serve to illustrate various embodiments, by way of example only, and to explain various principles and advantages in accordance with a present embodiment.

[19] FIG. 1 depicts a block diagram of a transaction system for determining an effectiveness of an electronic advertisement.

[20] FIG. 2 depicts a flow chart of a method for determining an effectiveness of an electronic advertisement.

[21] FIG. 3 depicts a schematic diagram of a computer system suitable for use in executing the methods depicted in FIG. 2.

WHAT IS CLAIMED:

1. A computer-implemented method for determining an effectiveness of an electronic advertisement, the method comprising, at a server:

i. sending an electronic communication to a user device associated with a user, the electronic communication including downloadable access to the electronic advertisement;

ii. generating an acknowledgement time stamp identifying at which time the electronic communication was sent to the user device;

iii. receiving a notification message, generated by the user device, in response to the electronic advertisement being downloaded at the user device;

iv. generating a unique identifier and a download time stamp in response to the download of the electronic advertisement, the unique identifier identifying the user device, and the download time stamp identifying a time at which the electronic advertisement was downloaded;

v. receiving transaction data relating to a transaction initiated by the user using the downloaded electronic advertisement, the transaction data indicating the electronic advertisement has been used to initiate the transaction and including the unique identifier and a transaction time stamp identifying when the transaction was initiated by the user using the downloaded electronic advertisement, wherein the transaction data includes one or more of: a merchant category code, an industry code, and, merchant information;

vi. determining a first component of a relevance score of the electronic advertisement for the user based on comparing a first predetermined time period against a first time period between the acknowledgement time stamp and the download time stamp, wherein, with the first time period being less than the first predetermined time period, and the first component is assigned a positive score, wherein, with the first time period being greater than the first predetermined time period, the first component is

assigned a negative score, and wherein, the positive score is higher than the negative score;

vii. determining a second component of the relevance score of the electronic advertisement for the user based on comparing a second predetermined time period against a second time period between the download time stamp and the transaction time stamp, wherein, with the second time period being less than the second predetermined time period, the second component is assigned a secondary positive score, wherein, with the second time period being greater than the second predetermined time period, the second component is assigned a secondary negative score, and, wherein, the secondary positive score is greater than the secondary negative score;

viii. combining the first and second components in determining the relevance score;

repeating steps i.-viii. for a plurality of users;

ranking the users based on the relevance scores to identify high ranking users having relevance scores above a determined threshold;

identifying profile characteristics of the high ranking users based on the transaction data associated with the high ranking users, wherein the profile characteristics including, for each of the high ranking users, one or more of: the merchant category codes, the industry codes, and, the merchant information;

identifying candidate users having similar profile characteristics to the identified profile characteristics of the high ranking users based on merchant categories, industry codes, and merchant information of transactions completed by the candidate users;

storing on a database, an association of each of the identified candidate users, the respective identified similar profile characteristics, and a mode of electronically delivering electronic advertisements to the respective candidate user; and

identifying electronic advertisements similar to the electronic advertisement, based on similarity of the identified profile characteristics of the users and the identified

similar profile characteristics of the candidate users, for sending to the candidate users via the stored modes of electronically delivering electronic advertisements.

2. The method according to claim 1, wherein the electronic communication is an email.

3. The method according to claim 1, wherein the transaction data identifies a mode of payment used to settle the transaction, the mode of payment comprising at least a cash payment.

4. An apparatus for determining an effectiveness of an electronic advertisement, the apparatus comprising:

at least one processor; and

at least one memory including computer program code;

the at least one memory and the computer program code configured to, with at least one processor, cause the apparatus at least to:

i. send an electronic communication to a user device associated with a user, the electronic communication including downloadable access to the electronic advertisement;

ii. generate an acknowledgement time stamp identifying at which time the electronic communication was sent to the user device;

iii. receive a notification message, generated by the user device, in response to the electronic advertisement being downloaded at the user device;

iv. generate an unique identifier and a download time stamp in response to the download of the electronic advertisement, the unique identifier identifying the user device and the download time stamp identifying a time at which the electronic advertisement was downloaded;

v. receive transaction data when settling a transaction initiated by the user using the downloaded electronic advertisement, the transaction data indicating the electronic advertisement has been used to initiate the transaction and including the unique identifier and a transaction time stamp identifying when the transaction was initiated by the user using the downloaded electronic advertisement, wherein the transaction data includes one or more of: a merchant category code, an industry code, and, merchant information;vi. determine a first component of a relevance score of the electronic advertisement for the user based on comparing a first predetermined time period against a first time period between the acknowledgement time stamp and the download time stamp, wherein, with the first time period being less than the first predetermined time period, the first component is assigned a

positive score, wherein with the first time period being greater than the first predetermined time period, the first component is assigned a negative score, and, wherein, the positive score is higher than the negative score;

vii. determine a second component of the relevance score of the electronic advertisement for the user based on comparing a second predetermined time period against a second time period between the download time stamp and the transaction time stamp, wherein, with the second time period being less than the second predetermined time period, the second component is assigned a secondary positive score, wherein, with the second time period being greater than the second predetermined time period, the second component is assigned a secondary negative score, and, wherein, the secondary positive score is greater than the secondary negative score;

viii. combine the first and second components in determining the relevance score;

repeat steps i.-viii. for a plurality of users;

rank the users based on the relevance scores to identify high ranking users having relevance scores above a determined threshold;

identify profile characteristics of the high ranking users based on the transaction data associated with the high ranking users, wherein the profile characteristics including, for each of the high ranking users, one or more of: the merchant category codes, the industry codes, and the merchant information;

identify candidate users having similar profile characteristics to the identified profile characteristics of the high ranking users based on merchant categories, industry codes, and merchant information of transactions completed by the candidate users;

store on a database, an association of each of the identified candidate users, the respective identified similar profile characteristics, and a mode of electronically delivering electronic advertisements to the respective candidate user; and

identify electronic advertisements similar to the electronic advertisement, based on similarity of the identified profile characteristics of the users and the identified similar profile

characteristics of the candidate users, for sending to the candidate users via the stored modes of electronically delivering electronic advertisements.

5. The apparatus according to claim 4, wherein the electronic communication is an email.

6. The apparatus according to claim 4, wherein the transaction data identifies a mode of payment used to settle the transaction, the mode of payment comprising at least a cash payment.