VOTER PROFILE ANALYSIS AND MESSAGING SYSTEM AND METHOD

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] Not applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not applicable.

BRIEF DESCRIPTION OF THE DRAWINGS

[0003] FIG. 1 is a network diagram of an exemplary system for processing voter and subscriber transactions in accordance with the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

[0004] In a typical election cycle, a significant amount of election information is communicated to voters about the candidates and issues. Much of this information is communicated through campaign advertising sponsored by the candidate or a special interest group, and the voter has no control over when and in what detail these messages are communicated. Many voters desire to be more informed about the candidates and issues slated to appear on their ballots prior to entering a polling place on election day. Similarly, many candidates and special interest groups desire to gauge voter support throughout the campaign and communicate additional information to target voters. To address these and other issues, the present invention is directed to a system and method that may be used to (1) provide election information to voters, (2) aggregate voter profiles that include personal information and session information for voters, (3) a ggregate unof ficial voting selections of voters, (4) present pre-defined or customized reports to subscribers based on an analysis of the voter profiles and unofficial voting selections, and (5) communicate messages between subscribers and target

voters. While the invention will be described in detail below with reference to an exemplary embodiment, it should be understood that the invention is not limited to the specific system configuration or methodology of this embodiment. In addition, although the exemplary embodiment is described as embodying several different inventive features, one skilled in the art will appreciate that any one of these features could be implemented without the others in accordance with the invention.

[0005] Referring to FIG. 1, a network diagram is provided showing an exemplary system for processing voter and subscriber transactions in accordance with the present invention. As discussed further below, users of the system generally include (1) voters who perform voter transactions via a voter portal of the system and (2) subscribers (e.g., candidates, campaign officials, political parties, special interest groups, political action committees, associations, polling companies, and members of the news media) who perform subscriber transactions via a subscriber portal of the system.

[0006] As can be seen, the system includes a plurality of DMZ servers each of which hosts and runs one or more applications in accordance with the present invention. The DMZ servers are accessed by users via the Internet, although other communication networks known in the art could also be used. The DMZ servers may be co-located at a single geographic location or may be located at different geographic locations. User traffic is routed and distributed to the DMZ servers through any suitable firewall and load balancer as is known in the art. The DMZ servers provide a variety of services, such as user authentication, application layer, Web services, presentation layer, and application event logging. As discussed further below, each of the DMZ servers include a user interface (i.e., the voter and subscriber portals) that presents various web pages to the users.

[0007] The DMZ servers communicate with a plurality of private LAN servers through any suitable firewall. The private LAN servers may be co-located at a single geographic location or may be located at different geographic locations. The private LAN servers provide a variety of services, such as messaging, queuing, communication, file services, data transform, extract and load services, and file level encryption. The private LAN servers store a variety of different types of data, including core shared data (e.g., voter profile data, reports and report requests, as described further below) and deployed instance data that is specific to a jurisdiction (e.g., ballot data, voter data needed for ballot authentication, and the unofficial voting selections of voters, as described further below). It can be seen that the data stored on each private LAN server is replicated to the other private LAN servers so that the data is synchronized between all of the servers. It should be understood that the data may be stored in a database or any other type of data storage device or structure known in the art. In some cases, data is not necessarily stored on these servers, but is still accessed through linkages or online real-time mechanisms to external sources.

[0008] Of course, one skilled in the art will understand that the system shown in FIG. 1 is merely an example of a network architecture that may be used to implement the present invention. One skilled in the art will understand that other network architectures may also be used, including a more decentralized model in which certain applications and/or data reside on other servers. It should be understood that the servers may be operated and managed by a central administrator or, alternatively, one or more of the servers may be operated and managed by individual voting jurisdictions. Thus, the system may be implemented with any number of servers at a variety of different locations in accordance with the present invention.

[0009] VOTER PORTAL

[0010] In an exemplary embodiment, each of the system servers provides a voter portal that presents various web pages to a voter. One web page displays a home screen that includes information, images and a log-in area. For example, icons for various modules, including a voter profile module, a candidate/issue research module, a voter/candidate match module, a voter message module and a ballot review/voting module, are displayed. Each module is accessed by selecting the appropriate icon. Alternatively, the home screen may display tabs for the modules such that each module is accessed by selecting the appropriate tab. It should be understood that the modules may be presented and accessed through a variety of methods known in the art for presenting action options to a user in addition to or instead of the icons or tabs described above.

[0011] The home page also displays a log-in area. Voters that are new to the site are can optionally cr eate an account username and password while voters returning to the site are prompted to enter their previously established username and password to access certain information, such as saved information. In certain cases, the voter's username and password also define the web pages that may be accessed by the voter. Thus, the voter is able to access various web pages of the site in accordance with the access rights for that voter.

[0012] In the voter profile module, voters are prompted to enter personal information such as name, address, phone number(s), email address, age, gender, occupation, voting history (whether they voted in the last general election, whether they voted in the last primary election, etc.), political party affiliation, or account nickname. The personal information received for each voter is stored on the system servers to define a voter profile. Alternatively or additionally, information from other accounts associated with the voter, such as Facebook or the official voter registration database maintained by the county or state, is used to populate the voter's personal information on the voter portal or is stored to further define the voter profile.

[0013] In the candidate/issue research module, voters can access election information on candidates and issues to prepare them for casting informed votes on election day. Candidate information includes, but is not limited to, a candidate's position on a particular topic (such as gun control, healthcare or immigration), a candidate's political history (such as titles and dates of offices previously held or legislative voting record if the candidate previously held public office), a candidate's personal information (such as place of birth, religious affiliation, family/marital status, employment history, community involvement, etc.), published public media articles associated with the candidate, or organizations or associations that support or oppose the candidate or issue. Issue information includes, but is not limited to, background on proposed constitutional amendments, tax referendums, and various propositions slated to appear on the ballot. Candidate and issue information is provided by candidates, candidate campaigns, special interest groups, political parties, associations, political action committees or other sources. The information can be stored on the system servers or accessed through hyperlinks to third party websites or publicly available electronic materials. In an exemplary embodiment, the candidate and issue information is indexed such that a voter can search by candidate name, topic key word (such as "gun control") or issue key word (such as "Proposition A"). Voter activity within this module, such as which candidates, topics, or issues are researched, is tracked and stored as session information on the system servers to further define the voter profile.

[0014] In the voter/candidate match module, voters can be matched with candidate(s) that support the voters' political positions. Voters are prompted to answer questions regarding their positions on highly debated topics, such as gun control, healthcare and immigration. Alternatively, this or other voter personal information is accessed through other accounts associated with the voter, such as Facebook, and used for candidate matching purposes. The

candidates are then ranked based on how closely their positions match the voter's positions. For example, if the voter is against gun control, against government health care and for immigrant amnesty, and if Candidate A is against gun control, against government healthcare and for immigrant amnesty, and if Candidate B is for gun control, against government healthcare and for immigrant amnesty, Candidate A will be displayed as an exact match for the voter and Candidate B will be displayed as a partial match for the voter. From there, the voter can access additional information about the candidates in the candidate/issue research module described above or send communications to candidates and organizations using the voter message module described below. The voter/candidate match module can also be used to identify all candidates that support a particular position on a single topic. For example, a list of candidates that support gun control can be displayed. Voter activity within this module, such as the answers to the topic position questions, how the candidates were ranked or matched to a particular voter and which topics and corresponding positions the voter used to sort the candidates, is tracked and stored as session information on the system servers to further define the voter profile.

[0015] Alternatively or additionally, a voter's voting selections can be related or associated with other voter profiles, association voting endorsement profiles or party voting profile selections and suggestions provided (e.g., messages such as "your selections closely match selections by other voters who live in the western part of the county and are between the age of 33-40," "your selections closely match the Green Party," "your selections closely match the League of Women Voters endorsements," or "74% of voters who similarly selected these candidates also selected no for the school bond issue and referendums" could be displayed).

[0016] In the voter message module, voters can share or post information, viewpoints, and communicate with subscribers or other voters. Preferably, the voter's account nickname (as

opposed to the voter's real name or email address) is used to identify the voter as the message sender or recipient. Voters can use this module to send questions, comments or research information to subscribers, election officials or other voters. As described further below, subscribers can send personal messages, messages to a target group of voters or blast messages, all of which would appear in the voter message module. Voter activity within this module, such as the number, frequency, sender/recipient and content of messages, is tracked and stored as session information on the system servers to further define the voter profile.

[0017] In the ballot review/voting module, voters are presented with an electronic ballot and are prompted to enter or otherwise indicate their unofficial voting selections for the various contests on the ballot. The voter's personal information, such as the voter's address or voter registration identifier, stored in the voter profile is used to determine the appropriate ballot style for the voter. Alternatively, a voter can enter or otherwise indicate her address or voter registration identifier (without logging into the voter portal) to access the appropriate ballot style. For each contest, the voter is presented with the candidates or issues just as she would at a polling place on election day. This feature allows a voter to become familiar with the content of the ballot. Preferably, the unofficial voting selections are encrypted and securely stored on the system servers.

[0018] In addition to entering an unofficial voting selection for a particular contest, preferably the voter will also be prompted to indicate how confident she is that the unofficial voting selection will match the official voting selection she will cast on election day. This can be accomplished by providing a sliding scale using descriptors, such as "unsure," "moderately sure," and "positive," or using percentiles to indicate the voters confidence in that selection, such as "less than 50%," "50-75%," "75-100%," and "100%." In an exemplary embodiment, a voter is

also provided with a space to record notes on a particular candidate or issue. The notes may include information copied from material provided through the candidate/issue research module or hyperlinks to such material. The voter activity within this module is tracked and stored as session information on the system servers to further define the voter profile.

[0019] In an exemplary embodiment, the unofficial voting selections stored on the system servers may be used for official voting purposes. In one embodiment, the unofficial voting selections are provided over a network connection to ballot casting systems, such as direct recording electronic (DRE) or ballot-on-demand (BOD) voting machines. In this embodiment, a voter's unofficial voting selections are displayed on the summary screen of the voting machine, whereby the voter has an opportunity to change her votes prior to casting an official ballot. In another embodiment, the voter accesses the voter portal and prints an unofficial ballot populated with her unofficial voting selections for use as a voting aid on election day. In yet another embodiment, the unofficial voting selections are encoded in a barcode that is printed by the voter or stored in the voter's smart phone or tablet. In this embodiment, the DRE or BOD voting machine is equipped with a barcode reader such that the unofficial voting selections for the voter are collected and displayed on the summary screen as described above. The unofficial voting selections may also be included in a text message that is sent to the voter or the ballot casting system. In another embodiment, the unofficial vote selections are transferred to the official online voting system, where it can be displayed on a summary screen and whereby the voter has an opportunity to change her votes prior to casting an official ballot. One skilled in the art will understand that the unofficial voting selections stored on the system servers may be accessed and used in different ways.

[0020] As is known in the art, whether a voter votes in a particular election is tracked in the voter's official voter registration record held by the county election office. In an exemplary embodiment, the information in the voter registration record is provided to and stored in the system servers to further define the voter profile. After the voter has voted in an election, her voter registration record is updated and this update is then provided to the system servers. In this manner, the voter portal displays the current voter registration record and the voter's status as having voted in the election.

[0021] Preferably, the ballot review/unofficial voting module described above is presented on web pages that have a different "look and feel" than the other web pages of the system so as to create an impression of an official voting environment. In an alternative embodiment, all or a portion of the ballot review/unofficial voting module may reside on the website of a particular voting jurisdiction (e.g., a Secretary of State website) that is accessed from the voter portal. This website may also enable the voter to perform other actions, such as voter registration, change of address, search for a polling location, and the like.

[0022] The invention includes a very useful segmentation of government sanctioned official set of information, functions and services which is distinguished in some manner from a non-government sanctioned, non-official set of information, functions and services. The government sanctioned area would only include official data and non-influential information, functions and services that are more objective and pristine, free of any suggestions for or against any particular selection, candidate, party, position, or referendum. The non-governmental set would be free to include a broader set of information, functions, and services that do not necessarily have to hold such a strict objective perspective. The non-governmental sanctioned area might include interactions, messaging, and advertisements that typical governmental entities

could be prohibited from engaging in , providing, or being associated with. These two segments are separate but integrated. They need to be able to interface with each other, allowing data and the user to transverse the two segments easily. But, a clear distinction of the government sanctioned area from the non-government sanctioned area may be very important. The degree of distinction could be great or small, designed in a fashion to be more or less apparent to the voter, as needed to satisfy each governmental customer that is sanctioning their portion of the service. Also the functions that will reside in either of these two segments may be different from one implementation to the other depending on the governmental customer policy and requirements.

[0023] SUBSCRIBER PORTAL

[0024] In an exemplary embodiment, each of the system servers also provides a subscriber portal that presents various web pages to a subscriber. The subscribers are users interested in obtaining one or more reports based on an analysis of the voter profiles and unofficial voting selections or sending messages to voters. For example, candidates, campaign officials, political parties, special interest groups, political action committees, associations, polling companies, members of the news media and even interested voters are all potential subscribers. Initially, a web page displaying an informational home page that includes a log-in area is presented. To log-in, subscribers that are new to the site are prompted to create an account username and password while subscribers returning to the site are prompted to enter their previously established username and password. The subscriber's username and password define the data and/or web pages that may be accessed by the subscriber. Thus, the subscriber is able to access various web pages of the site in accordance with the access rights for that subscriber.

[0025] After logging into the subscriber portal, a web page displays a home screen that includes icons for various modules, including a report module and a message module. Each module is accessed by selecting the appropriate icon. Alternatively, the home screen may display tabs for the modules such that each module is accessed by selecting the appropriate tab.

[0026] In the report module, subscribers can request and view reports analyzing the aggregated voter profiles and unofficial voting selections to determine voting patterns and trends. The information can be used to evaluate why voters vote a certain way and what can be done during the campaign season to influence voter support, maximize fund raising efforts, and modify or reinforce political platforms. The report parameters can be pre-defined or customized, as discussed further below. Of course, it should be understood that the reports provided to subscribers do not contain any personal information of the voters. Also, the system may enable each voter to decide if she wants her voter profile and unofficial voting selections to be included in the report analysis (i.e., the voter can either opt-in or op-out for this purpose).

[0027] The administrator may receive requests for pre-defined reports from and deliver reports to the subscribers through the subscriber portal. An example pre-defined report is an analysis of unofficial voting selections made in a particular contest, such as the presidential race. This same report can be run as often as the subscriber requests based on the subscription plan. The requests can be entered manually or set to occur automatically at a desired interval (daily, weekly, every Monday and Friday, etc.). The information provided in the report can be provided in raw form, such as in spreadsheet format displayed on a subscriber portal web page, or in the context of a high-level summary, i.e., derivative data. Report packages that include different pre-defined reports and update frequencies could be offered to subscribers at a set fee whereas the fees for customized reports (described below) could vary depending on the complexity and

update frequency. In an alternative embodiment, certain pre-defined reports and periodic updates of the same that the average voter would find interesting, such as the unofficial voter selections for the presidential race, could be made available to voters by providing a report module on the voter portal. The report requests and generated reports are stored on the system servers such that the requests may be edited or re-submitted and the reports may be reviewed or compared to an updated version by the subscribers.

[0028] Alternatively, the subscribers can generate customized reports by entering the desired parameters for the analysis through the subscriber portal. An example customized report is an analysis of unofficial voting selections for the state senate race made by voters residing in Columbia, Missouri as of a date prior to a candidate giving a campaign speech at the local university and as of a date post-speech. With this customized report in hand, the candidate could assess whether her speech had an effect on voters in that particular geographic location. The candidate could conclude that her speech had a positive effect on voters in the area if more voters selected or changed their selection to her in the state senate contest or if a number of voters increased the confidence indicator on the sliding scale associated with the selection of her name. Additionally, the candidate could request that the data be analyzed by voter age, such that the report would show whether the effect of the speech was positive or negative in any particular voter age range. If the effect of the speech was positive for voters over 35 in age but negative for voters under 35, the candidate could request that a message clarifying her position on certain issues be sent to voters under the age of 35 using the subscriber message module described below.

[0029] In another example, a special interest group could request a report analyzing the demographics, i.e., gender, age, occupation, geographic location, etc., of voters that have made

an unofficial selection for a particular candidate or issue. In this manner, the special interest group could identify a group of voters to target with their campaign message. By way of a specific example, if a report generated three weeks prior to election day indicates that a majority of voters who have made an unofficial voting selection in support of a constitutional amendment to eliminate the right to bear arms are female voters residing in metropolitan areas, the special interest group promoting this amendment could request that a message emphasizing the key points of their position be sent to all female voters in metropolitan areas using the subscriber message module described below as part of a get-out-the-vote effort.

[0030] In the subscriber message module, subscribers can request messages to be sent to all voters or a target group of voters. The subscriber is prompted to enter the text of the message and define the intended recipient(s). The intended recipients may be defined by voter profiles that include personal or session information that match the criteria selected by the subscriber. For example, a subscriber can define the intended recipients as all voters living in Missouri who have yet to make an unofficial voting selection for the gubernatorial race or who have made an unofficial voting selection but also indicated a low level of confidence in that selection on the sliding scale. The subscriber is also prompted to select how the message should be delivered. The message could be delivered through the voter portal and appear in the voter message module, in a banner across one or more of the voter portal web pages, in a pop-up box that appears the next time a voter logs into the voter portal or in any other fashion on the voter portal. Alternatively, the message could be delivered via text message, email or robocall using the phone numbers and email addresses stored in the voter profiles that match the recipient criteria.

[0031] Alternatively, a message could be sent to other subscribers as well. For example, a candidate may want to send a message to all the associations that support her platform. In this

embodiment, a subscriber profile module configured to capture information about the subscriber, such as name, address, entity type (corporation, limited liability corporation, partnership, association, non-profit, etc.), political affiliation/party, or candidates the subscriber has official endorsed. This information is stored to define a subscriber profile used to identify subscribers as message recipients.

[0032] While the present invention has been described and illustrated hereinabove with reference to an exemplary embodiment, it should be understood that various modifications could be made to this embodiment without departing from the scope of the invention. Therefore, the invention is not to be limited to the specific system configuration or methodology of the exemplary embodiment.

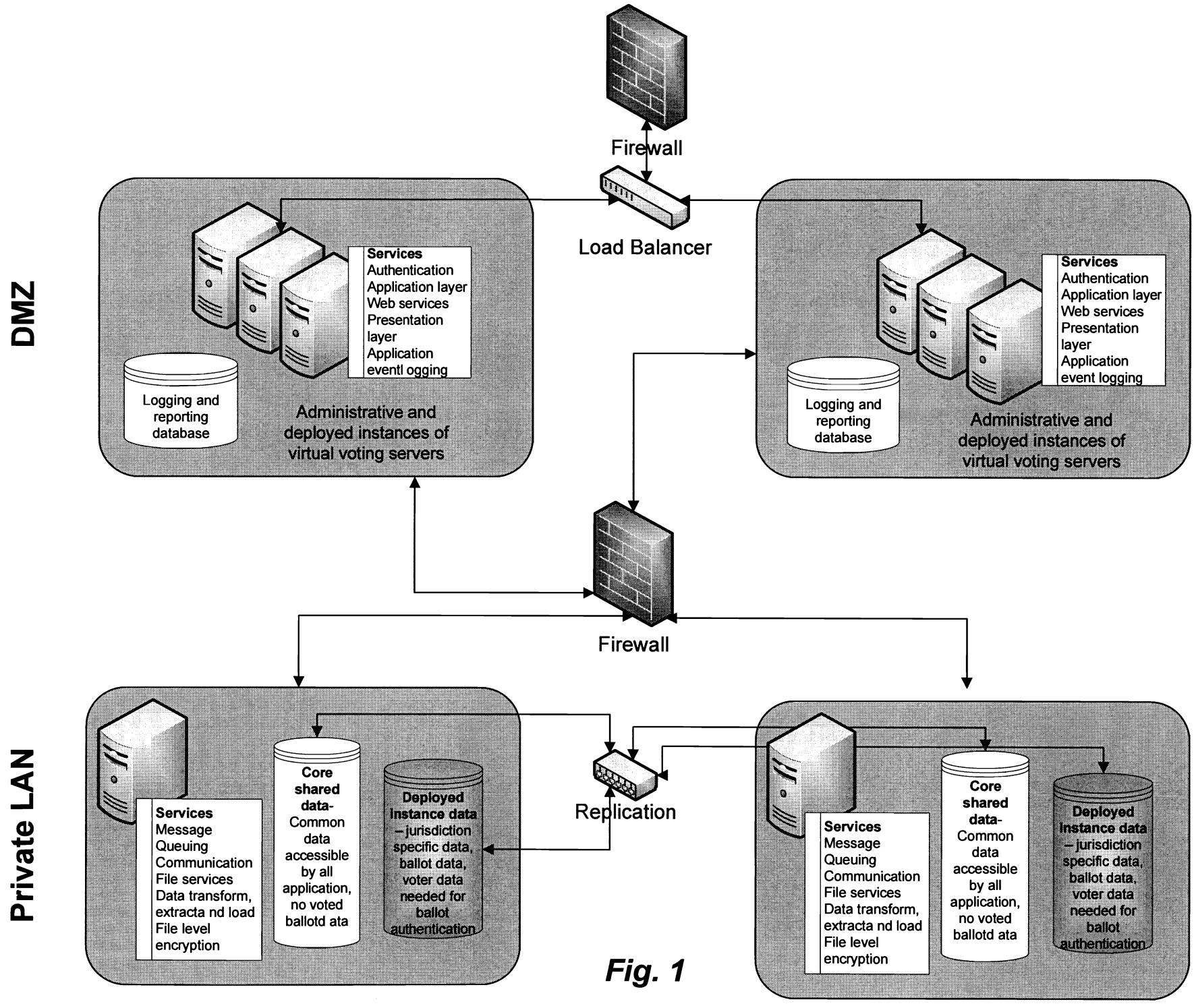
DMZ
Private LAN
Firewall
Load Balancer
Services
Authentication
Application layer
Web services
Presentation layer
Application eventl ogging
Logging and reporting database
Administrative and deployed instances of virtual voting servers
Services
Authentication
Application layer
Web services
Presentation layer
Application event logging
Logging and reporting database
Administrative and deployed instances of virtual voting servers
Firewall
Replication
Services
Message Queuing
Communication
File services
Data transform, extracta nd load
File level encryption
Core shared data- Common data accessible by all application, no voted ballotd ata
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Fig. 1