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PRIVILEGE SPACES FOR SECURE COMMUNICATIONS

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PRIVILEGE SPACES FOR SECURE COMMUNICATIONS

Constant distraction from the Internet, cell phones, and other connected devices, can make it difficult for people to stay focused during a long meeting. It may also be difficult to find a secure platform to capture only relevant content during a meeting. When conducting a meeting, there may be confidential information presented that should only be provided to specified individuals. However, there may be a need for other individuals to be in attendance of the meeting for other purposes. Thus, it can be difficult to organize a meeting in which privileged information may be shared with those who need it while still having all in attendance who are required. Additionally, many of the meeting's participants may not need to be exposed to certain information during the presentation of which the participant's time is largely wasted.

Furthermore, the flow of a meeting may be inefficient, addressing topics that are not of concern or involving participants who may not need to be present. A meeting may also require additional participants when the flow of the meeting changes to a new topic but the required contributors for the new topic are not present. Therefore, large amounts of time may be wasted rescheduling meetings to include needed contributors and/or by following an unstructured or inflexible meeting plan.

It may also be difficult to know what to get out of a meeting or in what direction to go after a meeting is completed. It may be inefficient for future progress to have to revisit the takeaways from previous meetings before pursuing new topics to be discussed and resolved. Identifying key decisions, insights, and additional areas to pursue may be time consuming or impossible in some situations. For example, when a meeting steers substantially from a defined topic or issue to be resolved, the resulting insights may be ignored or difficult to perceive from the flow and the result of the meeting.

The technology described herein addresses the above issues with event/meeting facilitation by providing privilege space events to ensure secure communication. A privilege space event may be implemented by an event facilitation system (“event facilitator”). The privilege space event may compartmentalize each participant, or contributor, into the parts of the meeting that are appropriate for the contributor. Therefore, each contributor may be present for their specific part of the event/meeting in which they are needed and no more. The event facilitator may adjust the privilege space event in real-time to ensure that appropriate tools, contributors and resources are used by the privilege space event at any given time (e.g., people with specific skills can be added on the fly, new participants can be provided access to necessary information ahead of time to be able to participate in and contribute to the event, etc.).

In order for the event facilitator to implement the privilege space event, the privilege space event may be designed by a privilege space designer. The designer may work on pre-hand conditioning of the event as well as preparing the event and project details. Event and project details may include attendees, documents to be used, previous outcomes related to the privilege space event, etc. The designer may additionally select tools to be used in preparation of and/or during the event. The tools may include, for example, corporate databases, subscription contents or services, augmented reality (AR) or virtual reality (VR) devices, sensors to detect particular activity/input associated with the event, media contents (images, video, and/or audio), local content, etc. The designer may also identify contributors that need to be pre-exposed to information prior to execution of the event. The designer may further define an initial desired outcome of the event.

Next, the event facilitator may use the design of the privilege space event to identify pre-event activities and facilitate the performance of these activities prior to the event. The pre-event

activities may include, for example, the definition of roles, required expertise and availability of various participants, the preparation of (e.g., providing necessary access to) the selected tools, the preparation of the agenda for various participants, “pre-education” of various participants before the event, etc.

Further, the event facilitator may start the execution of the privilege space event. The agenda, defined roles, attendees, pre-planned work and other initialization information may be used to begin execution of the event. Each participant can have access to appropriate information and/or documents only during a particular time to reduce overall exposure of participants to unintended portions of the event. During execution of the event, the desired outcomes of the event may deviate from the original desired outcomes defined by the designer. A facilitating agent may be used to re-design the event as a topic and/or desired outcome of the event shifts in a new direction. The facilitating agent may be a software component that processes contributions from participants using a machine learning model to identify new attendees to invite, new documents or information to be added, and specific attendees to whom such documents or information should be made available and at what time. The machine learning model may be previously trained using characteristics of changes occurred during prior events (e.g., participants of a prior event at the time of the change, deviations from a topic discussed during a prior event, changes in a desired outcome of a prior event, tools and/or documents used prior to or during the change, etc.) and actions taken to address the changes (e.g., new documents added to the prior event, new participants invited to the prior event, access provided to particular new or existing participants for any of the new or existing documents, making certain tools available for the new participants, etc.).

As discussed above, the facilitating agent may apply characteristics of a change occurred during the current event to the trained machine learning model and use the output of the machine learning model to identify what action(s) should be taken next (e.g., inviting additional attendees to the current event, providing access to new or existing documents for the new or existing attendees, etc.). Alternatively, the facilitating agent may be an individual that controls the flow of the privilege space event by defining next steps (next actions) to be performed during the privilege space event. The individual may be provided a graphical user interface to facilitate the execution of the event.

After execution of the event is completed, data derived from the event may be stored by the system to be analyzed and/or accessed by subsequent privilege space events. The data may include completion data, outcomes, archives, and post-processed data. The data may be analyzed to provide for action items, next steps, next meeting topics, etc. The outcomes may additionally be published to each participant based on each participant's exposure to information in their local privilege and the context of that information. The data, the analysis of the data, and published outcomes may automatically be archived for future reference. Finally, post-processing of the data may provide an indication as to whether the event moved the project forward, and how it did so. The event data and the results of the event may be used as additional training data to re-train and/or further refine the machine learning model.

The event facilitator may also allow users to rank privilege space events to be able to identify privilege space events that were more successful and/or valuable. The privilege space events may be executed in a public cloud platform using separate containers for individual privilege space events to provide a secure environment for each event.

In an illustrative example of a privilege space event, the event may be a meeting regarding a particular topic such as developing a product. The meeting may require participation by people with many different types of expertise, for example, carpenters, designers, electrical engineers, software engineers, etc. Each of these people may be contributors in the privilege space event. The context of everything that is required to provide the product may be input by the designer of the privilege space event or may be automatically selected based on the topic of the meeting (e.g., the materials used, the engineering design, the pricing, the supply chain, etc.). During execution of the meeting, a first contributor (e.g., a system designer) may participate in the first five or ten minutes regarding their role in product development. A second contributor may then come in (e.g., a specialist) to discuss a particular aspect of the project for the next fifteen minutes. A third contributor (e.g., a marketing person) may be included in the first five minutes because they need to know particular information about the product. A fourth contributor may be a decision maker and be present only at the end of the meeting to make a decision. Additionally, a fifth contributor may be invited in real-time based on something that the first, second, or third contributor did such that the topic shifted to something that the fifth contributor has expertise in. Each contributor may participate just as long as they are needed. Thus, each participant has access to information and participates when required, but is closed off from parts of the meeting that are not relevant to them. Once the meeting is concluded, information presented and actions taken are collected and analyzed. Input is then returned to the participants to recommend next steps and future actions to be taken regarding the project.

Figure 1 is a flow diagram illustrating a method of executing a privilege space event. At step 102, a privilege space event is defined based on a design (including event and project details) specified by a designer. A designer may design the event according to a starting desired

outcome to produce a corresponding experience of the event. The designer may define one or more pre-event activities that need to be completed before execution of the event. At block 104, based on the design of the event, one or more pre-event activities may be identified and executed, such as preparing an agenda, identifying attendees and selecting tools to be used during the event. Preparing the agenda may include identifying topics relevant to the desired outcome of the meeting. The agenda may be prepared for everyone to be included at the right time in their localized privilege time slot. A localized privilege may be the access to the meeting provided to a specific individual. Each participant may have their own localized privilege to the meeting (e.g., individualized access/privilege to certain information and contributions). Pre-event activities may also include identifying contributor expertise and availability of designated contributors, and pre-educating participants/attendees prior to the event. Pre-educating contributors may include exposing contributors to information relevant to what the contributor is presenting about so there is no delay during the event for the contributor to become familiar with the information.

At block 106, the privilege space event begins execution in view of the design of the event and pre-event activities. The privilege space event can begin execution based on the original desired outcome of the design. Each of the tools, attendees, agenda, etc. identified and selected during pre-event activities can be included and used upon the beginning of the event. At block 108, the privilege space event may be adjusted in real-time in view of contributions to the event. Contributions to the privilege space event may include any input provided by a contributor, such as audio, images, video, input detected by sensors, input via AR/VR devices, etc. An event facilitator may adjust the event to have a new desired outcome, and/or may adjust the tools, attendees, or agenda to more efficiently reach a desired outcome based on the

contributions. The event facilitator may add a new topic from the topics identified in pre-event activities, add (e.g., invite) a new participant, etc. The event facilitator may continue to have access to the corporate databases, machine learning databases, and local servers. Therefore, any additional information, documents, algorithms, and the like may be retrieved from those identified sources in view of any deviations from the initial event plan. Additionally, each user's role may be adjusted. In one example, during the event, a contributor may initially have a five minute part of the event to present. However, some contributions during the event may indicate that the contributor's expertise may be more relevant than was projected and therefore the contributor's part may be expanded to two parts of fifteen minutes. In another example, an attendee that is merely supposed to be present during part of a meeting may become a contributor in light of new information.

At block 110, the privilege space event is concluded and the event data is stored by the system. All event data may automatically be archived. At block 112, post-event feedback is provided to users and information is provided to the system for post-processing. Post-event feedback may include output of action items and next steps to take in the project, if any questions or issues were adequately addressed, next meeting topics, etc. Additionally, outcomes may be published to contributors based on who was exposed by their local privilege and the context of the information they were exposed to. Post-processing may include a feedback loop to determine if the meeting helped move the project forward. During peak activities of the event, background processes may offload event data to be archived and/or processed. Archives and other collected data may be fed back to the system for post-processing. Post-processing may also retrieve any stored documents that may help in facilitating future actions.

The method of creating and executing a privilege space event described herein allows efficient use of attendee/contributor time in a meeting. Each attendee may be exposed to only a small relevant portion of a meeting to ensure that the attendee is only exposed to information that the attendee needs to know. Therefore, meetings can run efficiently, exposing privileged/private information to everyone who needs to be exposed to it and no one who does not need to be exposed to it. Less of each contributor's, and participant's, time is wasted because each contributor or participant attends only part of the meeting that is relevant to them. Additionally, the post-event feedback provides users with valuable input regarding the outcome of the meeting and ways to proceed after the meeting. Thus, the privilege space event provides for an effortless and frictionless interaction in a secure environment where information is readily available and non-diluted.

Further to the description above, a user may be provided with controls allowing the user to make an election as to both if and when systems, programs or features described herein may enable collection of user information (e.g., information about a user's activities, information about content of documents, a user's preferences, or a user's current location), and if the user is sent content or communications from a server. In addition, certain data may be treated in one or more ways before it is stored or used, so that personally identifiable information is removed. For example, a user's identity may be treated so that no personally identifiable information can be determined for the user. Thus, the user may have control over what information is collected about the user, how that information is used, and what information is provided to the user.

ABSTRACT

A method for creating and executing a privilege space event for secure communications. A privilege space event can be defined based on a design (including event and project details) specified by a privilege space designer. Pre-event activities are executed in view of the design of the event, such as generating an agenda identifying each participant's part in the event, selecting tools to be used by the event, and selecting attendees. The privilege space event begins execution using the initial agenda, and attendees selected in the pre-event activities. During execution of the event, an event facilitator adjusts the event in real-time based on contributions from participants and/or machine learning models. The privilege space event is concluded and event data is automatically archived. Event data is used to provide post-event feedback. Event data is also fed back into the system for post-processing.

Keywords: privileged communication, confidential, real-time, meeting, event, privilege space event, machine learning, collaborative environment, local privilege, facilitator

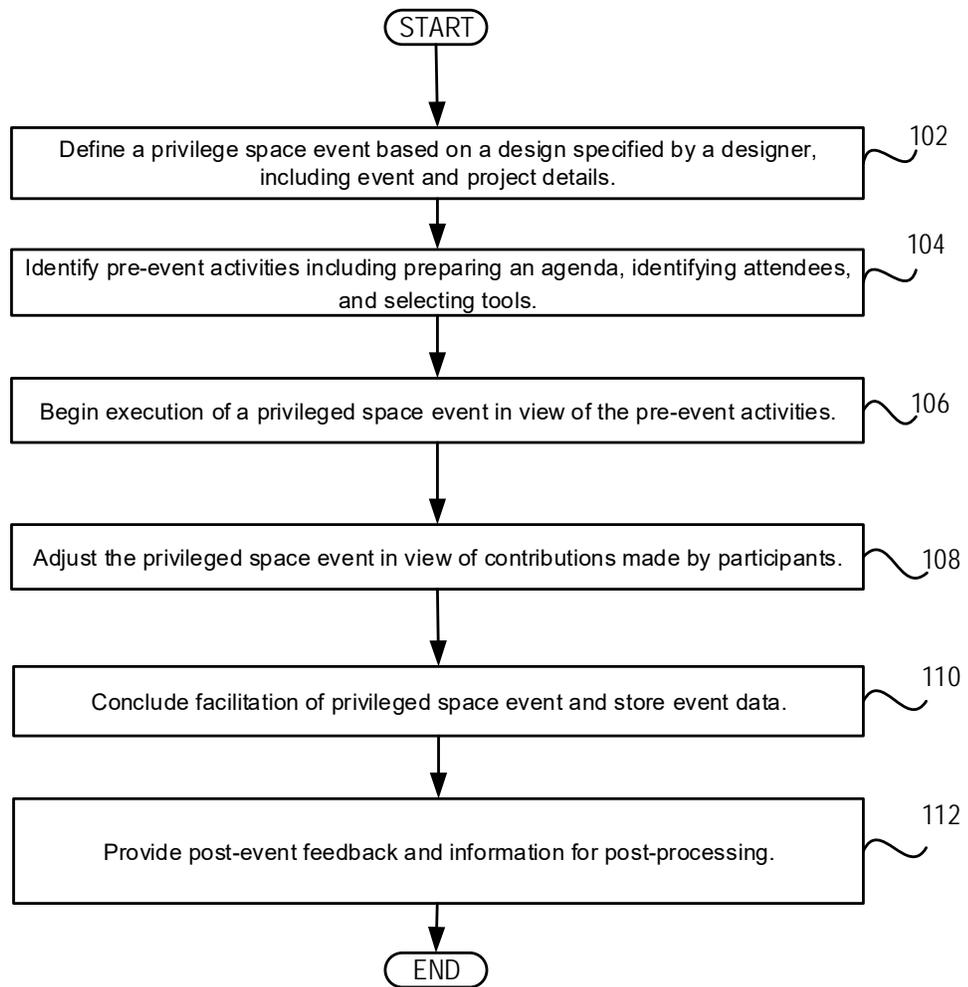


FIG. 1