

Making Enterprise Recorded Meetings Easy to Discover and Share

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ABSTRACT

The prevalence of social content sharing such as video and photo sharing has greatly enhanced information discovery and social interaction over the internet. This has inspired similar efforts within enterprise to encourage collaboration and expertise sharing. Moreover, enterprise web meeting tools increasingly become an important platform for knowledge workers to participate and collaborate remotely. Although these web meetings contain rich enterprise knowledge and are frequently recorded, they are rarely revisited and shared. To encourage enterprise knowledge sharing especially, to facilitate the discovery and sharing of enterprise meetings, we develop an end-to-end enterprise meeting service Agora that manages the full cycle of hosting and sharing recorded web meetings. Agora leverages the functionality of existing enterprise meeting hosting, video sharing and presentation sharing services to build a coherent meeting service. Agora was deployed as a cloud service in a global fortune 500 company which allows its customers to test new collaborative technologies.

Keywords: Collaboration, Distributed Multimedia Search, Enterprise, Information Management, Video Sharing, Web Meetings

1. INTRODUCTION

In global enterprise, more and more knowledge workers attend remote meetings. This trend will not only continue, but also become more prevalent due to globalization. Every day, thousands of online meetings are held. During these

meetings, critical decisions are made, important information is shared and future action items are defined. Since these meetings contain rich enterprise expertise, the ability for knowledge workers to discover and share online meetings is highly valuable in an enterprise.

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Although online meetings can be recorded easily using existing web conferencing tools (e.g., *IBM Sametime Meetings* and *Cisco WebEx*), recorded meeting archives are rarely revisited and shared. There are three main reasons:

1. **Poor Content Indexing:** Online meetings are often recorded as audios and videos. Without proper indexing, the content of these meeting recordings is not searchable. Currently, it is difficult if not impossible for users to find meetings that satisfy their information needs.
 2. **Scattered Meeting Artifacts:** In addition to videos, there are other meeting artifacts (e.g., presentation slides) and metadata (e.g. meeting time, participant names) associated with a meeting. Typically meeting information is scattered on different servers: high-level meeting metadata is stored only on the meeting hosting server; meeting videos are stored and shared on a video server, and slides are stored and shared on a slide server. Since these meeting artifacts are not directly linked to each other, it is difficult to locate all the information related to a meeting.
 3. **Lengthy Meeting Recordings:** Unlike videos shared in the public domain, which are often short (e.g., average ~4 minutes on YouTube), enterprise meetings are long (normally 30 minutes to 1 hour). Frequently only a portion of a recorded meeting may be relevant to a user's information needs. Since currently most recorded meeting repositories do not support fine-grained meeting sharing (e.g. sharing the entire video instead of a video segment), users would have to sift through a long video from the beginning to the end to look for specific information. Fine-grained meeting sharing is often more effective and thus would be more preferable.
1. **Deploying an End-to-End Enterprise Meeting Service:** We have built and deployed an end-to-end enterprise meeting hosting and sharing service that allows users to host, store, search and share meetings.
 2. **Seamlessly Integrating Existing Enterprise Services to Facilitate Fast Development:** Developing a comprehensive meeting service is highly complex. In Agora, we focused on developing new technologies that can seamlessly integrate distributed content and functions together to create a new enterprise meeting service.
 3. **Enhancing Meeting Discoverability Via Collaborative Content Creation And Indexing:** To enhance meeting discoverability, Agora meetings are indexed with a rich set of metadata. They are created either automatically by the system using content analytics (e.g., captions are automatically created for meeting videos) or manually added by humans (e.g., user added tags and meeting description). Moreover, since machine-created metadata are often imperfect, Agora allows users to correct mistakes in the metadata, whether created automatically or by another person.
 4. **Supporting Fine-Grained Meeting Search and Sharing:** Agora enables fine-grained search by anchoring the meeting index on a timeline. Thus, the search results may point to not only the full meeting recording but also to the period(s) of time that the search result belongs. Moreover, to facilitate easy sharing, Agora allow users to share any portions of a meeting by specifying a start and end time.

To address the above problem areas, we developed an end-to-end enterprise meeting service *Agora*. Our main contributions are:

The remainder of this paper is structured as follows. We first discuss how our work relates to prior work, focusing on systems whose goal is to view and share recorded meetings. In Section 3, we present the system overview, describing the existing meeting hosting, video sharing and slide sharing services and the new Agora components that glue all the pieces together. In section 4 and 5, we highlight two of the new Agora components the *composite search engine*

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