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COLLABORATIVE COMPUTING AND ITS DRIVEN APPLICATIONS IN REAL TIME ENVIRONMENT

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ABSTRACT

This paper presents, what is Collaborative Computing and how the collaborative computing is constructed and what are the fields in real-time we are applying the collaborative model.

Keywords: Collaborative Computing, Group communication, peers

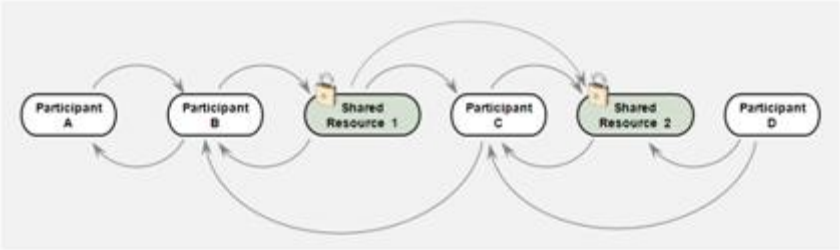
INTRODUCTION

Collaborative computing allows Group communication on documents and projects, usually in real time, by taking advantage of underlying network communication systems. Here some new software's have been developed for collaboration environment.

Collaborative Computing presents a unified data processing model in which Services, Processes and People collaboratively work on shared data towards a common goal. The paradigm reduces system complexity and offers a possible solution to the cooperative processing and the cloud integration dilemma that many

enterprise architects are facing today. Instead of building such systems from scratch, developers may now have the option of buying them.

The term collaborative defines the relationship between system elements. Participants of a collaborative system are considered peers, simultaneously being able to play as both client and server, having equal responsibilities and functions. Collaborative system components function cooperatively by sharing state information and data resources.



Likened to other middleware, a collaborative system advocates for direct (non-brokered) communication using "smart" peers, flattening the architecture into a single layer of components wrapped in a network communication fabric as illustrated in the diagram.

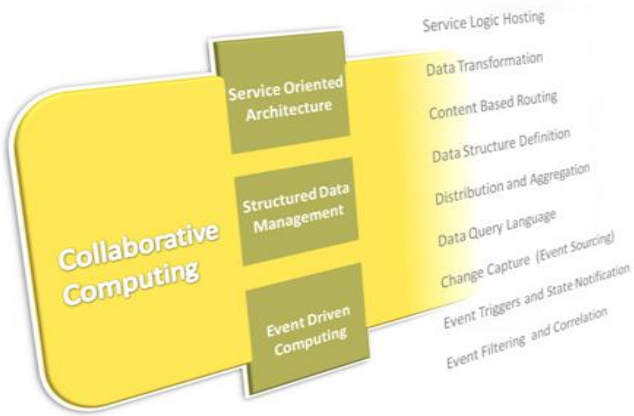
Different non-collaborative systems, participants may interact with each other directly using a common application programming interface and organize access to shared resources using the same organization and protection model.

Collaborative computing integrates key aspects of social networking and distributed application principles into a unified data processing platform; and identifies critical properties that are all important to a successful implementation.

ENABLING A SOCIAL ENTERPRISE:

By its nature, any collaborative system is a social network built around the data and information assets of its participants. Its membership may include support staff, employees, customers and many other leading entities such as software services, mobile devices or even business processes.

Participants may engage in exchange of structured data either in point-to-point fashion or via group communication. Members may be selectively notified of any critical issues that happen within the arrangement and may react to such consequences. System participants may dynamically form virtual communities, advertise their state and available data channels as well as query data format and content relevance of such grooves.



Collaborative systems build on an number of critical capabilities found in Service Oriented Architecture, Event Driven Computing, and Structured Data Management.

Although the collaborative model overlaps a number of disciplines it is not an architectural style or an approach to organization design. Instead, the term defines a programming paradigm that integrates aspects of

social computing and personal collaboration tools into a unified data processing model. The example is not prescriptive as to the applied science used in the execution.

Take the purpose of personal collaboration tools in human interaction. Information elements used by collaborating participants form a physically shared (virtually co-located) "data space". Using collaboration tools the users may interact with each other by direct communications or by manipulating *data space* information in a cooperative and globally aware manner.

APPLICATIONS OF COLLABORATIVE ENVIRONMENT

REAL-TIME COLLABORATIVE APPLICATIONS

Shared whiteboards: Allow two or more people to view and trace on a shared drawing surface even from different positions. This can be applied, for example, during a phone call, where each person can jot down lines (e.g. a name, phone number, or map) or to play collaboratively on an optical trouble. Most shared whiteboards are designed for informal conversation, but they may also serve structured communications or more sophisticated drawing tasks, such as collaborative graphic design, publishing, or applied science applications.

Chat systems: Permit many people to compose messages in real-time in a public space. As each person takes a message, it looks at the rear of a scrolling screen. Chat groups are normally made by listing chat rooms by name, location, number of people, topic of discussion, and so on.

Many organizations allow for rooms with controlled access or with moderators to guide the discussions, but most of the topics in which researchers are interested involve issues related to unmoderated real-time communication, including anonymity, taking after the flow of conversation, scalability with the number of users, and abusive users.

While jaw-like schemes are possible using non-text media, the text version of chat has the rather interesting feature of receiving a direct transcript of the conversation, which not only has long-term value, but allows for backward reference during conversation. This feature makes it easier for people to drop into a conversation and still pick up on the ongoing discussion.

Video communications: The systems allow two-way or multi-way calling with live video essentially a telephone system with an additional visual element. Monetary value and compatibility issues limited early use of video systems to scheduled video conference meeting rooms. In addition to supporting conversations, video may also be practiced in less direct collaborative situations, such as by offering a survey of activities at a distant fix.

Multi-player games: Have always been reasonably common in arcades, but are now becoming quite common on the internet. Many of the earliest electronic arcade games were multi-user; for example, Pong, Space Wars, and car racing games. Games are the prototypical example of "non-cooperative" multi-user situations, though even competitive games require players to cooperate in following the rules of the game. Games can be enhanced by other communication media such as chat or video systems.

Decision support systems: Are planned to facilitate groups in decision making. They provide tools for brainstorming, critiquing ideas, putting weights and probabilities on events and alternatives, and voting. Such systems enable presumably more rational and even-handed decisions. Primarily designed to facilitate meetings, they encourage equal participation by, for instance, providing anonymity or enforcing turn-taking.

NON-REAL TIME COLLABORATIVE APPLICATIONS:

Email: Is by far the most common collaborative software application (besides of course, the traditional telephony). While the basic technology is designed to pass simple messages between 2 people, even relatively basic email systems today typically include interesting features for forwarding messages, filing messages, creating mailing groups, and attaching files with a message. Other features that have been explored include: automatic sorting and processing of messages, automatic routing, and structured communication (messages requiring certain information).

Newsgroups and mailing lists: Are similar in spirit to email systems except that they are intended for messages among large groups of people instead of 1-to-1 communication. In practice, the main difference between

newsgroups and mailing lists is that newsgroups only show messages to a user when they are explicitly requested (an "on-demand" service), while mailing lists deliver messages as they become available (an "interrupt-driven" interface).

Workflow systems: Allow documents to be routed through organizations with a relatively-fixed process. A simple example of a workflow application is an expense report in an organization: an employee enters an expense report and submits it, a copy is archived and then routed to the employee's manager for approval, the manager receives the document, electronically approves it and sends it on, and the expense is registered to the group's account and forwarded to the accounting department for payment. Workflow systems may provide features such as routing, development of forms, and support for differing roles and privileges.

Hypertext: Is a system for linking text documents to each other; an obvious example is the Web. Whenever multiple people author and link documents, the system becomes group work, constantly evolving and responding to others' work. Some hypertext systems include capabilities for seeing who else has visited a certain page or link, or at least seeing how often a link has been followed, thus giving users a basic awareness of what other people are doing in the system. Page counters on the Web are a crude approximation of this function. Another common multi-user feature in hypertext (that is not found on the Web) is allowing any user to create links from any page, so that others can be informed when there are relevant links that the original author was unaware of.

Group calendars: Allow scheduling, project management, and coordination among many people, and may provide support for scheduling equipment as well. Typical features detect when schedules conflict or find meeting times that will work for everyone. Group calendars also help to locate people. Typical concerns are privacy (users may feel that certain activities are not public matters), completeness, and accuracy (users may feel that the time it takes to enter schedule information is not justified by the benefits of the calendar).

Collaborative writing systems: May provide both real-time support and non-real time support. Word processors may provide asynchronous support by showing authorship and by allowing users to track changes and make annotations to documents. Authors collaborating on a document may also be given tools to help plan and coordinate the authoring process, such as methods for locking parts of the document or linking separately-authored documents. Synchronous support allows authors to see each other's changes as they make them, and usually needs to provide an additional communication channel to the authors as they work (via videophones or chat).

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