

A Review on Progression of Groupware Systems

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Abstract - In today's world most of the business activities are carried out in groups. The groups can be in the same place or spread across the geography. To make the group work more effective we need to have proper collaboration and coordination among the group. The development of Information technology has paved way for the improvement of group activities in terms of the collaboration and effective management. The business can be carried out successfully only if we are able to identify and effectively use the various tools provided by IT. The tools such as meeting systems, co-authoring tools, computer conferencing software, process coordination tools, and communication tools are some of the tools which can be used for supporting and managing the group activities. In case were the members can't respond at that time to some message with the help of groupware tools they can respond later on some messages. The organizational objectives can be achieved only when the group activities can be carried out effectively.

Key Words: Groupware Systems, Computer communication, Chat systems, Collaborative systems

1. INTRODUCTION

The traditional way of doing business is time consuming and difficult in cases were the business groups are situated at different locations. In order to execute the business more effectively and accurately it is always important to have timely information for decision making. There are lot of process involved in business execution like meeting, discussions, task scheduling, communication, managing workflows. The advances in the field of information technology has extended its help and support in performing these complex activities more effectively. In order to carry out the complex activities of a business operation the coordination of tasks among persons of same or different groups are very important. The term Groupware denotes a type of software that supports group activities. Groupware can also be called as the set of software's tools having the capacity to support many group activities. Lotus notes was the first commercially available groupware. The introduction of Groupware systems has improved the group activities in terms of the time saving, efficiency and effective communication

and coordination. There are number of Groupware tools available today.

The main objective of this paper is to have an overview of the Groupware systems and different types and the customizations. The scope of the paper includes defining the Groupware, evolution of the groupware tools, and the scope of Groupware in the current business scenarios, findings and suggestions.

2. WHAT IS A GROUPWARE?

The term groupware was used for the first time by Peter and Trudy Johnson-Lenz as they claim while responding to an enquiry from Oxford English Dictionary in April 1994 "We first coined the term "groupware" in our research notes on October 4, 1978 during our work with Murray Turoff and S. Roxanne Hiltz on the Electronic Information Exchange System (EIES) at the New Jersey Institute of Technology." Groupware always makes the user aware that he is part of group. Most of the software's hides and protects the users from each other, the Groupware software rather emphasizes on the multiple user environment, collaborating and coordinating the tasks so that users can actually see each other, yet they do not conflict with each other. The group activities such as sharing of information, coordination of activities and effective communication among team members can be carried out effectively with the help of software tools which supports the Groupware systems. Thus we can classify the Groupware as the software's that can collaborate the group functions for scheduling, messaging, conferencing, monitoring and supporting each other in order to improve timely communication and sharing of information. This helps the groups to have better interaction among themselves.

The groupware maintains a social structure of the groups. The activities of the groups are arranged in such a way that each member is well aware of each other member in the group. "Awareness support is an essential part of Groupware " says[3] Tom Gross in his paper "Supporting Effortless Coordination: 25 Years of Awareness Research". In the Groupware system the

social requirements are integrated with the technological support.

According to the support in real-time and non-real time situations, the Groupware's can be classified as synchronous and asynchronous Groupware systems.

	Same Time (Synchronous)	Different Time (Asynchronous)
Same Place "collocated"	Face to Face Interaction	Asynchronous Interaction
Different Place "distance"	Synchronous Distributed interaction	Asynchronous Distributed Interaction

Table 1: Johansen's Time space Matrix Source: (Johansen, 2007)

The Groupware systems are classified based on two primary dimensions:

1. Whether the users are working on together at the same time (" Synchronous Groupware) or different time ("Asynchronous groupware").
2. Whether the users are working together in the same place (" Collocated") or different places ("non collocated")

3. SYNCHRONOUS GROUPWARE

Synchronous Groupware enables real time collaboration among groups which are at geographically different locations. The different Synchronous Groupware includes

1. **Shared Whiteboards** allows two or more people to draw or view on drawing surfaces which are shared even from different locations. White boards are designed for conversation which are informal, it can also be used for structured communications or sophisticated drawing.
2. **Video Communication** allows two way or multi way calling with live video. Video calling can be helpful in many of the scenarios but in cases where audio telephones are adequate, the video calling might not prove very useful.
3. **Chat Systems** can be helpful in writing messages in real time. Chat groups are formed by name, location, number of people, and topic of discussion. The chat groups can be

controlled with moderators who can lead the discussions.

4. **Decision Support Systems** are defined to help in making decisions in the real time. The tools provided for brainstorming can also help in brainstorming, critiquing ideas, putting weights and probabilities on events and alternatives, and voting. The systems are designed to facilitate meetings, they also encourage equal participation for instance providing anonymity or enforcing turn-taking.
5. **Multiplayer games** are quite common on internet in the recent times. Games can be further enhanced by other communication media, such as chat or video system.

4. ASYNCHRONOUS GROUPWARE

Asynchronous Groupware enables real time collaboration among groups not at the same time. It supports communication between geographically dispersed groups of individual at different times. The different types of Asynchronous Groupware includes

1. **Email** is the most common groupware application. The basic technology is designed to pass simple messages between two people, even the relatively basic email systems today typically include features for forwarding messages, creating mailing groups, and attaching files with a message. It also includes features like automatic sorting and processing of messages, automatic routing, and structured communication.
2. **Newsgroups and mailing lists** are similar to email systems except that they are intended for messages among large groups of people. In practice the main difference between newsgroups and mailing lists is that newsgroups only show messages to a user when they are explicitly requested, while mailing lists deliver messages as they become available.
3. **Workflow systems** allow documents to be routed through organizations through a relatively-fixed process. Workflow systems provide features such as routing, development of forms, and support for differing roles and privileges.
4. **Hypertext** is a system for linking text documents to each other, with the Web being an obvious example. 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.

5. **Group calendars** allow scheduling and coordination among many people, and provide support for scheduling equipment as well. Group calendars also help to locate people. Typical concerns are privacy, completeness and accuracy
6. **Collaborative writing systems** 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.

5. CUSTOMIZATION IN GROUPWARE

1. **Groupware applications** that support communication, meetings and information sharing as general-purpose applications ready to be used by a wide range of users for a variety of purposes. However, groupware applications are rarely ready to use, they require some degree of customization. How much work is required depends in part on the type of application, whether it was developed for a particular customer and how the application is architected. This is an important topic in terms of the use of Groupware system.
2. **Content-based customization.** In this case the application is merely a shell and doesn't really become useful until someone begins putting content in. Exmples are discussion databases, news groups, e-mail etc. For all these examples, the "customization" is done by one or more end-users by supplying content. No specialized technical skill is required.
3. **Setting external parameters.** This is also end-user customization but is more intentional application to suit the way they intend to use it. For instance, may want to define categories for documents to represent different research projects while a product group may want to define documents in terms of product families.
4. **Setting internal parameters.** Some degree of system administration or macro level programming is required for setting internal

parameters. For instance, in an internally developed system to support on-line reviewing of papers submitted to conferences, the level of customization from one conference to the next ranged from inputting a new set of reviewer names to rewriting parts of the interface to recoding the rules that govern who sees which papers and at what stage of the reviewing process.

5. **Totally customized solutions.** Applications that match the particulars of an organization's work practices, processes and culture often require that a customized application be built either by someone within the organization or by engaging external consultants.

6. CONCLUSION AND SCOPE OF GROUPWARE

The deciding factor for the success if any organization in present business environment is the team or Group work. The proper collaboration among the team members have direct impact on the success of the team/group. The groupware tools are useful in all kinds of collaboration needs. Some important business activities and the popular tool for the activities are listed below.

Sl. No.	Area of Groupware usage	Examples
01	Conferencing	Audio/Video Conferencing, Desktop Video conferencing
02	Scheduling	Group Scheduling and Calendaring
03	Meeting	Online Meeting systems
04	Discussion	Discussion Databases
05	Messaging	E-mail/ Electronic Messaging

06	Presentation	Collaborating Presentation Software
07	Authoring	Group Authoring
08	Knowledge Management	Knowledge Management systems
09	Project Management	Project Management Software
10	Work Flow	Work Flow Management Systems

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