6. Groupware Technology

1. **Introduction:**
   (i) Groupware is a technology designed to be used by group of people for sharing information.
   (ii) Groupware is an environment where all users can share there documents at a platform where daily task of communicating ,collaborating and coordinating with others take place.
   (iii) It automates business processes by using workflow management and collaborated computing techniques.
2. **Groupware:**
   (i) Groupware is technology designed to facilitate the work of groups.
   (ii) This technology may be used to communicate, cooperate, coordinate, solve problems, compete or negotiate.
   (iii) While traditional technologies like the telephone qualify as groupware, the term is ordinarily used to refer to a specific class of technologies relying on modern computer networks, such as email, newsgroups, videophones, or chat groupware technologies are typically categorized along two primary dimensions:
   (iv) Whether users of the groupware are working together at the sametime ("realtime" or "synchronous" groupware) or different times ("asynchronous" groupware).
   (v) Whether users are working together in the same place ("colocated" or "face-to-face") or in different places ("non-colocated" or "distance").
3. **Use of groupware in organizations:**
   (i) Qulity improvement.
   (ii) Better cost control.
   (iii) Increased productivity.
   (iv) Better customer service.
   (v) Support for TQM.

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(vi) Allows for fewer meetings.
(vii) Automating routine processes.
(viii) Provide new services.
(ix) There are technological infrastructures available to support groupware.
(x) Decreasing cost for purchasing the hardware and software.
(xi) Downsizing is increasing the need for greater productivity.
(xii) Well known companies are offering groupware.
(xiii) Increased competition.
(xiv) Increased complexity in products and business procedures.

4. **Five basic categories for groupware product:**
   (i) Email/messaging.
   (ii) Group calendaring and scheduling.
   (iii) Conferencing products.
   (iv) Workflow tools.
   (v) Group document handling.

5. **Email/messaging:**
   (i) The difference between email and messaging.
   (ii) Email is an application used to read and create electronic mail messages.
   (iii) Messaging is the electronic infrastructure upon which email resides. Messaging consists of two components:
   (a) The user (front end).
   (b) Messaging services (back end).

6. **Examples of email/messaging products available:**
   (i) cc:Mail (Lotus Development).
   (ii) Microsoft Mail/Exchange.
   (iii) Intelligent Mail (Banyan).
   (iv) MHS (Novell).
   (v) Time and Place/2 (IBM).

7. **Group calendaring and scheduling:**
   (i) Helps organizations track and manage schedules of individuals within an organization.
   (ii) Assists in communication.
   (iii) Saves time.
   (iv) Lowers costs.
   (v) Schedule across multiple time zones.

8. **Real world example:**
   (i) Scheduling scenario.
   (ii) CE Software, Inc.
   (a) Marketing department.

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6.1 The Scheduling Scenario

An emergency meeting was called, concerning cutting costs. The meeting needed to be held by the end of the day on Friday. The four managers needed for the meeting, were spread out doing other projects at different locations.

(i) The biggest problem.

(ii) Getting the managers together for an hour by the end of Friday.

1. **Without group calendaring and scheduling:**
   - (i) Call the managers on the phone.
   - (ii) Leave messages.
   - (iii) Discovering the managers won't be back for some time.
   - (iv) Email managers and wait for a response.
   - (v) Frustration builds due to not being able to get a hold of the four managers.
2. **With group calendaring and scheduling:**
   - (i) Open up the scheduling application.
   - (ii) Select the managers needed for the meeting.
   - (iii) Do a "free time search."
   - (iv) Schedule the meeting.
   - (v) Leave a brief message describing the purpose of the meeting.
3. **Conferencing/EMS (Electronic Meeting System):**
   - (i) Brings people together over large distances.
   - (ii) Saves time.
   - (iii) Lowers travel expenses.
   - (iv) Increase productivity.
   - (v) Assists in increased involvement of employees.
4. **EMS (Electronic Meeting System):**
   - (i) EMS is typically a network of personal computers. One for each person involved in the meeting.
   - (ii) Collection of computer based tools:
   - (a) Brainstorming tool
   - (b) Idea organizer
   - (c) Voting tools
   - (d) Focus group discussion tools
5. **Examples of conferencing products available:**
   - (i) Show ME 2.0 (Sun solutions).
   - (ii) Lotus notes (Lotus development).
   - (iii) Oracle office (Oracle systems).
   - (iv) Team talk (Trax softworks).
   - (v) The meeting room (Eden systems).

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6. **Workflow:**
   (i) Workflow is the automation and management of business processes.
   (ii) Workflow consists of:
   (a) Tasks-collection of activities
   (b) People
   (c) Tools-business applications
   (d) Data

7. **Examples of workflow products available:**
   (i) Workflow analyst (ATI).
   (ii) Flowmark (IBM).
   (iii) Jet form (Jet form corp.).
   (iv) Staffware for windows (Staffware).
   (v) Form flow (Delrina inc.).

6.2 Group Document Handling

1. **With the use of document management systems, organizations can:**
   (i) Manage large amounts of documents.
   (ii) Share digital documents opposed to paper documents.
   (iii) Allow group editing.
   (iv) Maintain document databases.
   (v) Link documents and people.

2. **Examples of group document handling products available:**
   (i) Face-to-Face (Crosswise).
   (ii) Workflo (FileNet).
   (iii) Documentum (Documentum, Inc.).
   (iv) MarkUp (Mainstay Software).

3. **Groupware barriers:**
   (i) Technical
   (ii) Cultural
   (iii) Economic
   (iv) Political
   (v) Confusion

6.3 Classification of Groupware

Groupware can be classified by: When and where the participants are working the function it performs for cooperative work.

6.4 The Time/Space Matrix

Classify groupware by:

(i) When the participants are working – at the same time or not
(ii) Where the participants are working – at the same place or not

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Common names for axes:

(i) **Time:** synchronous/asynchronous

(ii) **Place:** co-located/remote

	Co-located	Remote
Synchronous Shared work surfaces	Meeting rooms	Video Conference, Video-call etc.
Asynchronous Co-authoring systems & calendars	Argumentation tools	Email & Electronic conference

6.5 Time/Space Matrix

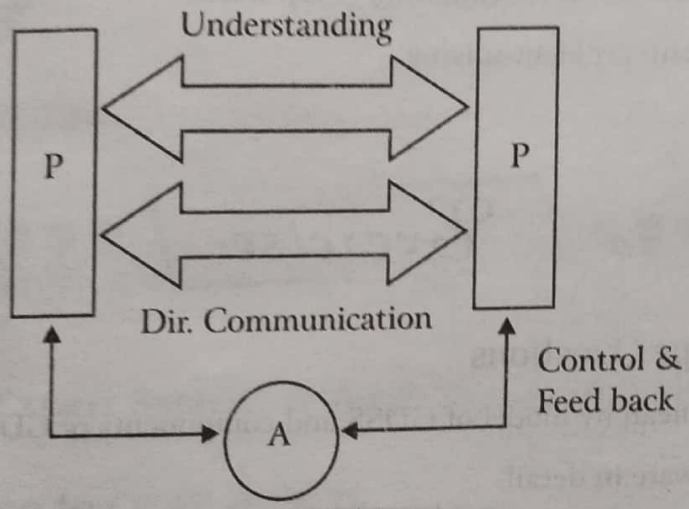

Fig. 2: Classification by function

Interactions support by a tool:

1. **Computer-mediated communication:** Direct communication between participants.
2. **Meeting & decision support systems:** Common understanding.
3. **Shared application & artifacts:** Control & feedback with shared work objects.

6.6 Design and Implementation Issues

The complexity of groupware development is still an issue. One reason for this is the socio-technical dimension of groupware. Groupware designers do not only have to address technical issues (as in traditional software development) but also consider the socialgroup processes that should be supported with the groupware application. Some examples for issues in groupware development are:

1. Persistence is needed in some sessions. Chat and voice communications are routinely non-persistent and evaporate at the end of the session. Virtual room and online file cabinets can persist for years.
2. Authentication has always been a problem with groupware.

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