



Distributed Applications

CSCW

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Computer supported co-operative working

- CSCW is concerned with the use of a computing environment and computing infrastructure to allow people to co-operate in their work.
- A widely used definition of CSCW was provided by Wilson [Wilson, 1990]:
" A generic term which combines the understanding of the way in which people work in groups with enabling technology of computer networking and associated hardware, software, services and technique " .

Group working

- Much of today's work is done not individually, but rather in a group
- any mechanisms or policies adopted should enable people to work together transcending boundaries of
 - time
 - space
 - functional organisation.

why people form groups

- Decomposing a task
- Gathering relevant expertise
- Pooling diverse viewpoints
- Performance

The Need for Secure Environment

- unauthorised access
- tampering of data.

Classification of CSCW

There is many classification of CSCW

Wilson [Wilson, 1990] divides the field of CSCW into two distinct but interrelated fields:

- the group working process
- the enabling technology employ to support it.

Group Working Process

Group working process was subdivided into four categories:

- individual aspects
- organisational aspects
- group work design aspects
- group dynamics aspects.

Individual aspects

the characteristics, skills, knowledge and artefacts that individuals bring with them to the group process

Organisational aspects

representation of organisational knowledge,
organisation design, and management issues

Group design aspects

user involvement, prototyping and usability, group work design procedures

Group dynamics aspects

- the way individuals behave within a group, and the way groups perform.
- the collaboration process, group performance and group behaviour are considered.

Enabling Technologies

- communication systems,
- shared work space facilities,
- shared information facilities,
- and group activity support facilities.

Communication systems

- advanced electronic mail systems,
- X.500 electronic mail directories incorporating group and organisational information,
- real-time desktop video conference systems
- and room-based video systems.

Shared workspace facilities

- remote screen-sharing
- face-to-face meeting support using shared individual screens and large public screen
- electronically aided white board.

Shared information facilities

- multimedia
- multi-user hypertext systems
- shared optical disc systems
- multi-user databases

Group activity support facilities

- procedure processing
- activity processors which allow a more general form of procedure processing
- methodologies and support tools to aid groups in analysis
- procedures and equipment with which they are to carry out a group activity

Security Issues

- The Oxford English Dictionary defines security as protection from attack or failure.
- Russell & Gangemi [Russell and Gangemi, 1991] defined a secure computer system based on the realisation of confidentiality, integrity, and availability in a computer system.

CIA

- Confidentiality requires that information be accessible only to those authorised for it,
- integrity requires that information remain unaltered by accidents or malicious attempts,
- availability means that the computer system remains working without degradation of access and provides resources to authorised user when they need it.

functional view of CSCW technology

[Teufel, 1995]

- business application level
- CSCW applications level
- CSCW artefact level.

artefacts areas and form a hierarchy

- Information Co-ordination
- Information Presentation
- Information Sharing.

The security requirements on each level will be different.

The Security Areas in CSCW

Security areas that are relevant for CSCW applications are

- Information Security
- Group Security
- Content Exchange Security
- Communication and Data Security.

Information Security Area

- Authenticity of Content.
- Goal Conformity.

Group Security Area

- group authentication
- group identification
- group accountability
- group integrity
- anonymity.

Content Exchange Security Area

- semantics of inter-personal and inter-group communication.
 - acceptance of obligation
 - personal accountability

Communication and Data Security

Area

- authenticity of communication partners
- confidentiality
- availability
- integrity
- identification.

References

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