

# COMPUTER MEDIATED COMMUNICATIONS (CMC)

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## INTRODUCTION

A new trend among businesses and educators, worldwide, is the increasing use of computer mediated communications to accomplish tasks and reach objectives. Computer mediated communications (CMC) can be defined as a “communicative transaction” which takes place through the use of networked, or linked, computers. There are two modes of CMC use, synchronous and asynchronous. Synchronous means that all the participants are online simultaneously, whereas asynchronous refers to a mode of CMC where they are not online at the same time. Examples of synchronous CMC tools include chat rooms, webinars and video conferences. Blogs, email, and discussion boards are examples of how to communicate using asynchronous CMC tools.

Increased availability of the internet, along with globalization, has driven CMC growth over the years, especially in the commerce and academic industries. There are many advantages to using these tools; one of the most obvious is that they allow participants time and place independence. This means that in order to collaborate with others using CMC tools, people are not required to be physically together, instead residing at individual locations. Further, in the case of asynchronous tools, participants do not have to be communicating at the same time. Time and place independence provides users with more freedom and cost savings. Before these tools were available people were required to travel long distances or spend large sums of money attempting to bridge location and time differences (Good Practice 2008).

Specific to academic use, CMC is increasingly being used for distance learning, or online classes. It provides students with the opportunity to attend classes and events online. It is also, typically, less expensive of an approach and does not restrict attendance based on location. Many distance learning programs, which utilize CMC tools, are finding that students are capable of receiving the same level of education and learning via a computer as they can by attending a class. Students are able to learn the true meaning and benefits of collaboration. Without being near each other, participants are able to set goals, monitor those goals, share ideas and documents, make decisions and take accountability for their work (La Bonte 1999). Through CMC, students are able to collaborate at a distance, forcing them to embrace the technology and work together.

Continued growth and expansion of computer mediated communications is inevitable as many businesses and academic institutes are adopting the technology to make improvements to their internal and external operational processes. Globalization and increasing travel costs due to fuel and economic conditions will continue to drive the expansion of computer mediated communications. Computer mediated communications can provide access to new ideas and collaborative sessions to anyone, anywhere. Its benefits far surpass traditional methods of communication and collaboration, which included a flurry of emails, scheduling appointments on paper with time and place restrictions. The organized and structured CMC applications and tools are providing people with a more efficient way of communicating.

## SKYPE

Skype is a free software application that allows users to communicate with anyone in the world. It was founded in 2003 by Niklas Zennstrom and Janus Friis and has offices around the world, including Sweden, UK and Europe. Skype was sold to EBay in 2005 for \$2.6 billion but operations have continued under the same mission and strategy. Skype can be used for:

- Chatting using text messaging (group and public)
- One-on-one chat sessions
- Video communication sessions
- Public: Choose a topic, set rules, promote chat

Skype calls are free when made to another Skype member. Users are identified through names instead of numbers and talk through a headset and microphone attached to computer. When a webcam is set up Skype calls can also include video chatting. Skype enables PC-to-PC Calling and VOIP (Voice Over Internet Protocol) Technology.

Although Skype is free, the company generates revenues through local and international calls to landlines and cell phones. Skype calls are encrypted with strong encryption algorithms to ensure privacy. Currently there are over 338 million registered users, with a growth rate of 54% since July of 2007. 75% of Skype users are male. Skype users are encouraged to practice web etiquette at all times when using the program (Skype 2009). Skype users are restricted from:

- Using vulgar, profane, or offensive language
- Post or request sexually explicit images
- Exploit a minor in any way
- Use racially, religiously, or sexually offensive language
- Discuss illegal activity
- Impersonate or represent Skype
- Request personal info from a minor

Some of Skype's most recent developments include:

- Introducing Subscriptions
  - Launched in July of 2008, this service allows people to pay a monthly fee and get unlimited calling to landlines in their home country or worldwide
- Skype On Your Mobile
  - Since September 2008, Skype can be downloaded onto many existing Motorola, Nokia, or Samsung devices
- Skype on PSP (Playstation Portable)
  - Downloadable from Sony.com, this allows you to call and take calls in Wi-Fi supported areas
- 3SkypePhone
  - Enables users to make free unlimited calls to any Skype User; functions as a normal phone

## **ELLUMINATE, INC.**

### **"Where Bright Ideas Meet"**

Elluminate's CMC tools provide a solution for distance learning via real-time online learning and collaboration. The company was founded in 2000 by Mike Mabey and Nashir Samanani. The headquarters are located in Calgary, Canada and Fort Lauderdale, Florida. Elluminate provides elearning and web collaborations for academic and corporate markets.

Elluminate technology incorporates a "No User Left Behind" Philosophy which is completely cross platform means it can be accessed from any desk or lap top computer and it operates at low bandwidth.

Elluminate MvSpaces' permit users to host a virtual classroom or office, hold virtual office hours and collaborate in small teams. Elluminate can be accessed free for a MvSpace seating three people at maximum (Synchronous 2008).

Elluminate works to ensure that users with disabilities are able to fully participate in sessions. This includes having:

- Keyboard access to menus
- Multiple streams of closed captioning
- Enlarged Video
- User defined color
- Screen reader compatibility
- Audio notification of events
- Capture and replay

### **Elluminate "Learning - Edge" Products:**

1. Elluminate Live!
  - Host live collaborations involving many participants and the use of multimedia
2. Elluminate Plan!
  - Organize and practice delivering content and activities prior to real-time sessions
  - Allows users to set "triggers" for actions before a session including, such as advancing slides or loading materials.
3. Elluminate Publish!
  - The ability to take Elluminate Live! recordings on the go via an iPod or MP3 player
  - Includes a function that creates stand alone recordings that need to be posted at a later time
  - High definition video podcasts will enable users to convert sessions to video
4. Intelligent Integration!
  - Elluminate can be integrated with a learning or content management systems
  - Software development kit for customers and partners to integrate Elluminate in with their existing LMS or CMS
  - Kits include "Application Programming Interfaces" (APIs) and specifications which permit users to develop an adapter to link to Elluminate

### **Elluminate Professional Services**

1. Elluminate Essentials
  - Includes implementation solutions and support, technical consulting and product training
2. Elluminate Training:
  - Users can sign up for live training sessions or watch previously recorded ones for free
  - For a fee, users can sign up for private sessions and customized courses
3. Custom Implementation
  - Includes content conversions, content development, report writing, and integration (Elluminate SDK Architect)

#### 4. Event Hosting:

- Hold online events such as sessions, conferences, or a combination of both
- Expert assistance in training presenters, conducting practice sessions, providing feedback and tips
- Technical support throughout entire process and for all users
- Creates the sessions, attendee registration, email reminders, and instructions for all participants
- Can generate reports on participant attendance and length of stay

#### 5. Technical Support:

- Self-help portal and searchable knowledge base
- Incident reporting and monitoring
- Call center management

### **Illuminate - Fire & Ice Initiative**

The Illuminate Fire and Ice initiative is a series of interactive exchanges between students in various countries around the world. The primary objective is inspiring students worldwide to embrace technology and work together to "combat climate change in their local areas". Offering "classrooms in a box" at affordable prices, Illuminate markets their products to developing nations in an effort to make a difference (Synchronous 2008).

### **TELEPRESENCE**

Telepresence is a set of technologies that gives one the experience of being present; an immersive video communications experience that allows you to meet with remote participants as if you're sitting in the same room. Telepresence allows people to use technology to meet across distances with the same realism and interaction as an in-person meeting. Users feel as if they are literally across the table from one another and people appear life-size with excellent picture quality and detail. It requires that the senses of the user, or users, are provided with such stimuli as to provide the feeling of being in another, distant location. The user(s) may be given the ability to affect the remote location. The user's position, movements, actions, voice, etc. may be sensed, transmitted, and duplicated in the remote location to bring about this effect. Therefore information may be travelling in both directions between the user and the remote location.

The Ontario Telepresence Project, started in 1990, was headquartered at the University of Toronto and was a 3 year, \$4.8 million, pre-competitive research project. The project's objective was to design and test advanced media space systems in a variety of workplaces. This was done in an effort to gain insights into key sociological and engineering issues. The Ontario Telepresence Project ended in December 1994 and was part of the International Telepresence Project, linking Ontario researchers to counterparts in 4 European nations. The Project's major sponsor was the Province of Ontario, through the Information Technology Research Centre (ITRC), and the Telecommunications Research Institute of Ontario (TRIO).

Teleport, later renamed TeleSuite, was the first commercially successful telepresence company. TeleSuite was founded in 1993 by David Allen and Harold Williams. The original intent was to develop a system that could allow families to interact across great distances without the hassle or costliness of flying. The first systems (TeleSuites) looked more like something out of an upper class home rather than conference rooms in an office suite, which are what most systems are used for today. Hilton Hotels was suppose to be the first main company using telepresence in its hotels, but because usage was low Hilton backed out. Shareholders eventually acquired controlling shares of stock and were able to take over the company. David Allen purchased all of the assets of TeleSuite and started a new company, Destiny Conferencing. The idea of telepresence did not take off until mega-corporations like HP and Cisco released similar systems around the mid 2000's

### **Telepresence Features**

1. **Vision** - Ideally, the entire field of view of the user is filled with a view of the remote location, and the viewpoint corresponds to the movement and orientation of the user's head. In this way, it differs from television or cinema, where the viewpoint is out of the control of the viewer.
2. **Sound** - Sound is generally the easiest sensation to implement with high fidelity, with the telephone dating back more than 100 years, and very high-fidelity sound equipment readily available as consumer gear. Stereophonic sound is more convincing than monaural sound, and surround sound is better still.
3. **Manipulation** - The ability to manipulate a remote object or environment is an important aspect of real telepresence systems, and can be implemented in large number of ways depending on the needs of the user.

### **Telepresence Teleconferencing**

Using a multiway video phone it is now possible to teleconference and have a face-face meeting rather than traveling great distances. A good telepresence strategy puts the human factors first, focusing on visual collaboration solutions that closely replicate the brain's innate preferences for interpersonal communications, separating from the unnatural "talking heads" experience of traditional videoconferencing. This is already a well-established technology, used by many businesses today.

Teleconferencing involves:

- Life-size participants, fluid motion, accurate flesh tones and the appearance of true eye contact.
- Each member of the meeting, or each party, can see every other member on a screen or screens, and can talk to them as if they were in the same room.
- Enormous time and cost benefits, as well as a reduced impact on the environment by lessening the need for travel - a damaging source of carbon emissions.

### **Telepresence Users**

The chief executive officer of Cisco Systems, John Chambers, compared telepresence to teleporting from Star Trek in June 2006 at the Networkers Conference. He saw the technology as a potential billion dollar market for Cisco.

Michael Venditte, Vice President of Engineering of Teleris defines Telepresence as a human experience of being fully present at a live real world location remote from one's own physical location. Someone experiencing video Telepresence would therefore be able to behave, and receive stimuli, as though part of a meeting at the remote site. The fore mentioned would result in interactive participation of group activities that will bring benefits to a wide range of users. Application examples could be sited within emergency management and security services, B&I, entertainment and education industries.

### **Telepresence Benefits**

- Reduced travel cost
- Education advantages
- Reduced carbon footprint
- Increased satisfaction with employee workload
- Increased productivity
- Reduced time wasted on travel and lodging

## ELECTRONIC WHITEBOARDS

An electronic whiteboard is a large interactive display that connects to a computer and projector. The projector projects the computer's desktop onto the board's surface, which allows the user to control the computer by using a pen, finger, or other devices. Typically, the board is mounted to a wall or on a floor stand. Electronic whiteboards are most commonly found in classrooms, corporate board rooms and work rooms, training rooms and broadcasting studios.

Accessories Used with Electronic Whiteboards include

- Projectors
- Wireless Unit
- Slate/Tablet
- Remote Control
- Personal Response System
- Printer

### Electronic Whiteboard Technologies

1. *Optical and Infrared* — when pressed to the whiteboard surface, the finger or marker sees the infrared light. The software then manipulates the information to triangulate the location of the marker or stylus. This technology allows the whiteboards to be made of any material; with this system no dry-erase marker or stylus is needed.
2. *Laser* — an infrared laser is located in each upper corner of the whiteboard. The laser beam sweeps across the whiteboard surface by using a rotating mirror. Reflectors on the stylus or marker reflect the laser beam back to the source and the (X, Y) position can be triangulated. This technology may be combined with a hard surface, which has long life and erases cleanly. Markers and styli are passive, but must have reflective tape to work.
3. *Digital Pens* — the embedded IR-cameras of the pen can track a tiny dot-pattern which can be printed on a large piece of paper (or on a special rear-projection foil). This technology allows a highly accurate tracking with approximately 600 dpi. The tracking results are independent from the shape and from the size.

### Advantages of Electronic Whiteboards

- Easy to use
- Interactive, accommodates with all ages
- Students tend to be more engaged in class

### Disadvantages of the Electronic Whiteboards

- Too many wires to connect to computer
- PC friendly, not MAC friendly
- Long setup time
- Some problems with recalibration

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