

place and ideal for health monitoring application. Mobile devices can offer situational computing that can take advantage of location-specific information through location-based mobile services (LMS). LMS can be beneficial for location-sensitive advertisements, public service announcements, social interactions, and location-specific educational information.

Who/Why- Business users benefit greatly from mobile computing. The ability to have access to e-mail and remote databases when being away from the office, is of great benefit to business in general. However, mobile computing has potential for most of the aspects of the human life as e-commerce, health care, entertainment among others.

### **Collaborative environment paradigm**

What/How - In a collaborative environment paradigm, computer networks allow members of a group to interact with other members on shared files and documents. This creates a virtual space where people can collaborate and work collectively with the use of Computer-mediated communication (CMC).

A groupware is a CMC that allows remote interaction by using synchronous technologies such as video conferencing, instant messaging and chat rooms or asynchronous technologies such as e-mail, bulletin boards and discussion groups.

An example of a collaborative environment is the *collaboratory*. Wulf (1989) called the collaboratory "a center without walls, in which the nation's researchers can perform their research without regard to physical location-interacting with colleagues, accessing instrumentation, sharing data and computational resources, and accessing information in digital libraries."

Where/When- *Computer supported cooperative work* (CSCW) (Galegher, Kraut, & Egido, 1990) is computer-assisted coordinated activity such as problem solving and communication carried out by a group of collaborating individuals. The multi-user software supporting CSCW systems is known as *groupware*. A groupware can be based on remote interaction using synchronous technologies like video conferencing or asynchronous technologies like email and discussion groups.

Who/Why- CMC is used in business in order to eliminate transportation costs since it helps to collaborate with remote customers or employees. Engineering benefits as well from this paradigm as it facilitates the collaboration of engineering teams spread at different locations. Universities use CMC to facilitate e-learning and research, an example of this is the Research Collaboratory for Structural Bioinformatics (RCSB, 2005).

An obvious example to the collaborative paradigm is our online MSc in computing programs that you are using, as well as other online education projects.

### **Virtual reality paradigm**

What/How -The virtual reality paradigm offer users a computer simulated alternative to the real world. Virtual reality technologies can be divided into two distinct groups:

- Nonimmersive environments
- Immersive environments

Non-immersive environments are screen-based, pointer-driven, three-dimensional (3D) graphical presentations that may involve haptic technology feedback as Virtual Reality Virtual Modeling language and QuickTime VR. Haptic technology refers to technology which