**Information Technology and Global Village**

The Information Technology developed by combining computing with high speed telecommunication links for carrying data in the form of text, sound, images, videos etc. is called information technology. IT is the use of any computers, storage, networking and other physical devices, [infrastructure](https://searchdatacenter.techtarget.com/definition/infrastructure) and processes to create, process, store, secure and exchange all forms of [electronic data](https://whatis.techtarget.com/definition/EDP-electronic-data-processing). Typically, IT is used in the context of enterprise operations as opposed to personal or entertainment technologies. The commercial use of IT encompasses both computer technology and telephony.

Global village means the entire world and its inhabitants. This term suggest that the information technology has “shrunk” the world. The world has become a “village” in which all people know each other as if they are living in a village.

**Applications of Information Technology**

is used in the context of enterprise operations as opposed to personal or entertainment technologies. It is a set of tools, processes, and methodologies and associated equipment employed to collect, process, and present information. It is commonly used as a synonym for computers and computer networks, but it also encompasses other information distribution technologies such as television and telephones. It also includes several layers of physical equipment (hardware), virtualization and management or automation tools, operating systems and applications (software) used to perform essential functions.

**Introduction to CAD**

CAD (Computer Aided Design) is the use of computer software to design and document a product’s design process.

Engineering drawing entails the use of graphical symbols such as points, lines, curves, planes and shapes.  Essentially, it gives detailed description about any component in a graphical form.

**Background**

Engineering drawings have been in use for more than 2000 years. However, the use of orthographic projections was formally introduced by the French mathematician Gaspard Monge in the eighteenth century.

Since visual objects transcend languages, engineering drawings have evolved and become popular over the years. While earlier engineering drawings were handmade, studies have shown that engineering designs are quite complicated. A solution to many engineering problems requires a combination of organization, analysis, problem solving principles and a graphical representation of the problem. Objects in engineering are represented by a technical drawing (also called as drafting) that represents designs and specifications of the physical object and data relationships. Since a technical drawing is precise and communicates all information of the object clearly, it has to be precise. This is where CAD comes to the fore.

CAD stands for **C**omputer **A**ided **D**esign. CAD is used to design, develop and optimize products. While it is very versatile, CAD is extensively used in the design of tools and equipment required in the manufacturing process as well as in the construction domain. CAD enables design engineers to layout and to develop their work on a computer screen, print and save it for future editing.

When it was introduced first, CAD was not exactly an economic proposition because the machines at those times were very costly. The increasing computer power in the later part of the twentieth century, with the arrival of minicomputer and subsequently the microprocessor, has allowed engineers to use CAD files that are an accurate representation of the dimensions / properties of the object.

**Use of CAD**

CAD is used to accomplish preliminary design and layouts, design details and calculations, creating 3-D models, creating and releasing drawings, as well as interfacing with analysis, marketing, manufacturing, and end-user personnel.

CAD facilitates the manufacturing process by transferring detailed information about a product in an automated form that can be universally interpreted by trained personnel. It can be used to produce either two-dimensional or three-dimensional diagrams. The use of CAD software tools allow the object to be viewed from any angle, even from the inside looking out. One of the main advantages of a CAD drawing is that the editing is a fast process as compared to manual method. Apart from detailed engineering of 2D or 3D models, CAD is widely used from conceptual design and layout of products to definition of manufacturing of components. CAD reduces design time by allowing precise simulation rather than build and test physical prototypes. Integrating CAD with CAM (Computer Aided Manufacturing) streamlines the product development even more.

CAD is currently widely used for industrial products, animated movies and other applications. A special printer or plotter is usually required for printing professional design renderings. CAD programs use either vector-based graphics or raster graphics that show how an object will look.

**CAD software enables**

* Efficiency in the quality of design
* Increase in the Engineer’s productivity
* Improve record keeping through better documentation and communication

Today, the use of CAD has permeated almost all industries. From [aerospace](https://www.designtechsys.com/aerospace-engineering-defence-services), electronics to manufacturing, CAD is used in all industry verticals. Since CAD encourages creativity and speeds up productivity, it is becoming more and more useful as an important tool for visualization before actually implementing a manufacturing process. That is also one of the reasons [CAD training](https://www.designtechcadacademy.com/knowledge-base/cad-training) is gaining more and more importance.

[**Types of CAD Software**](http://www.designtechcadacademy.com/knowledge-base/cad-software-types)

Since its introduction in late 1960’s, CAD software has improved by leaps and bounds.  A broad classification of CAD is:

* 2D CAD (X-axis, Y-axis)
* 3D CAD(X-axis, Y-axis, z-axis)
* 3D Wireframe and Surface Modeling
* Solid Modeling