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MECHANICAL ENGINEERING
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MEE 586

1. INTEGRATED CAD/CAM

An integrated CAD/CAM system provides one model supporting both design and manufacturing functions instead of having various file formats, numerous data translations/conversions, and different CAD and CAM models. This single model paradigm breaks down the communication barriers between design and manufacturing.

An integrated CAD/CAM solution helps unify the design through manufacturing process. An integrated CAD/CAM is a solution that uses a CAD system as its front end, geometry engine. Instead of importing or converting a CAD file, or some other data format, such as IGES or STEP, an integrated CAD/CAM platform performs CAD operations on the CAD file itself, offering single window, bi-directional associativity between the CAM applications and the CAD system. This technological advancement offers many advantages that can help one boost productivity, control cost and resolve manufacturability issues.

2.

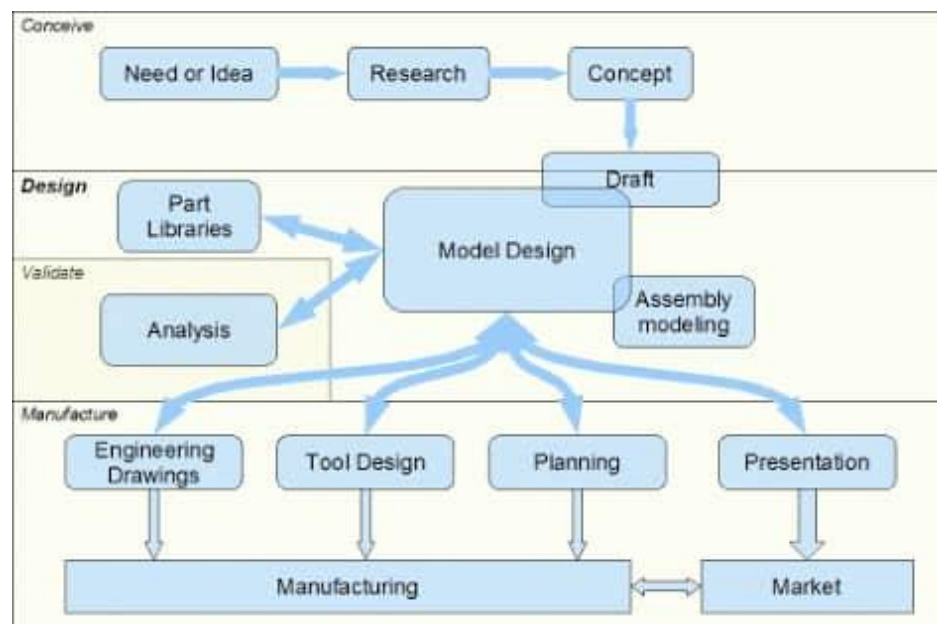


Fig: product cycle describing the scope of CAD/ CAM in the operation of manufacturing firm

3. CHARACTERISTICS OF A GOOD CAD SOFTWARE

- A. **RELIABILITY:** To avoid casualty the software must be able to avoid unwanted operations.
- B. **READABILITY:** this provides the capability within the software to help the user as and when required.

- C. **EFFICIENCY:** an efficient software is that which can use less resources such as CPU in terms of time and usage to give a better output.
- D. **SIMPLICITY:** A software must be simple to use and easy to understand and must be user friendly.
- E. **FLEXIBILITY:** the software must be able to incorporate the design modification without much of difficulty.
- F. **PORTABILITY:** The software must have the capacity to get transferred from one system to the other.
- G. **RECOVER ABILITY:** A good software must be able to give warnings before getting crashed and must be able to recover.

4. DIVISIONS OF SOFTWARE COMPONENTS

Software can be defined as a general term in informatics for all computer programs which do any action.

The basic division of software

- A. **System software:** this provides effective computer usage, it ensures the operation of the computer itself and its relations with the surroundings. they include the programs that are dedicated to managing the computer itself, such as the operating system, file management utilities, disk and operating system. The operating system manages the computer hardware resources in addition to applications and data. Without systems software installed in our computers we would have to type the instructions for everything we want the computer to do.

- Firmware: software which is contained in hardware (BIOS, firmware input-output devices as printers, CD/DVD drives, graphics and soundcards.

B. APPLICATION SOFTWARE

This are extended software which works on the basics of operating system and does specific functions according to the needs of a user. They are often called productivity programs or end user programs because they enable users to complete tasks, such as creating documents, spreadsheets, databases and publications, doing online research, sending email, etc. application software is specific to the task it is designed for and can be as simple as a calculator application or as complex as a word processing application. When you begin creating a document, the word processing software has already set the margins, font style and size and the line spacing for you.

C. WEB APPLICATION:

A web application is a computer program that utilizes web browsers and web technology to perform tasks over the internet.

Millions of businesses use the internet as a cost effective communications channel. It lets them exchange information with their target market and make fast., secure transactions. However, effective engagement is only possible when the business is able to

capture and store all the necessary data, and have a means of processing the information and presenting the result to the user.