BTME 3060
Computer Aided Design
Lecture 1

2nd Year

III Semester

Galgotias University

2020-21

Unit I: Introduction to CAD

- Syllabus
  - **Product Development Cycle**
  - Introduction to CAD, Hardware and software requirement of CAD;
  - Graphics input devices- cursor control devices, Digitizers, Scanners, speech oriented devices and touch panels,
  - Graphics display devices- Refresh cathode ray tubes, Raster-scan displays, Random-scan displays, CRT Monitors;
  - Input devices- keyboard, joy-stick, mouse, scanner;
  - DVST, Flat- panel display, Hard copy devices - Printers and Plotters, dot matrix, inkjet, laser printers,
  - Graphics Standards – Neutral File formats –IGES, STEP,
  - Graphics software, Graphics functions,
  - output primitives- Bresenham's Algorithm and DDA.

Lecture Objectives:

- Introduction to CAD

- understanding the software and hardware requirement for CAD

- Product development cycle

- Product cycle stage

Product Development Cycle

- The Product Life Cycle is the set of commonly identified stages in the life of commercial products

- The stages which a product cycles through during its lifespan are
  - Development,
  - Introduction,
  - Growth,
  - Maturity and
  - Decline.

Product Development stage

- This stage is not only about building the product, it includes carrying out research and testing too.

- Market research and competitor analysis are the main part

- to get an idea of the potential growth for the product

- to build a business case to validate the product.

- Gathering feedback from test users and testing the product

- Once the development of the product is complete it is ready for the introduction stage

Introduction stage

- the product is initially promoted

- Public awareness is very important to the success of a product

- two different strategies you can use to introduce your product to consumers

1) penetration strategy
   - a penetration strategy is used then prices are set very high initially and then gradually lowered over time
   - This is a good strategy to use if there are few competitors for your product. Profits are high with this strategy but there is also a great deal of risk.
   - If people don't want to pay high prices you may lose out.

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- 2) skimming strategy
  - In this case you set your prices very low at launch and gradually increase them
  - This is a good strategy to use if there are many of competitors who control a large portion of the market
  - Profits are not a concern under this strategy.
  - The most important thing is to get your product known and worry about making money at a later time.

Growth Stage

- The Growth stage is where the market share of product starts to grow
- Often at this stage a large amount of money is spent on advertising.
- There are several channels to advertise your product
- social media advertising channels, such as
  - Facebook and Twitter targeted adverts, or
  - promoted videos on Youtube
  - online newspapers
  - traditional advertising methods such as TV and radio
- The best and cheapest possible way for your product to be advertised is through word-of-mouth promoted from your customers
- After a period of an ongoing increase in sales, eventually your share of the market will stabilize

Maturity Stage

- During this stage sales grow at a very fast rate, then gradually your market share will begin to stabilize.

- The key to surviving this stage is differentiating your product from the similar products offered by your competitors

- When sales start to stabilize you will need to go back to the development stage, analyze your product and sales performance, to be able to innovate new features and services to help your company stay competitive in the market.

- If you do not restart the product life cycle here, you are more than likely to reach the decline stage.

Decline

- This is the stage in which sales of your product begin to fall

- Either everyone that wants to has bought your product or new, more innovative products have been created that replace yours

- To stay competitive, and keep your market share, you will need to reassess your existing product and iterate on it's features

- Ideally between the maturity and decline stage you would restart the product development cycle, to continue the success of your business

- .Some companies decide to withdraw their products completely from the market due to the downturn.

Summery

- Product Life Cycle is the set of commonly identified stages in the life of commercial products

- there are various stages which a product cycles through during its lifespan

Questions:

- describe the product development cycle
- Explain the product development stages.

Text books.

- Product Lifecycle Management by John Stark

- Product Lifecycle Management: Terminology and Applications by Razvan Udroiu, Paul Bere

- Thank you