

UNIT 6

Product life cycle Management

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Product life cycle Management

The logo of Galgotias University is a stylized, circular emblem. It features a central white space with a blue and yellow swirl. The swirl is surrounded by a larger, semi-transparent circular shape in shades of orange and red. The overall design is modern and abstract.

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Content

- ❖ PRODUCT DEVELOPMENT
- ❖ TRENDS AFFECTING PRODUCT DEVELOPMENT
- ❖ BEST PRACTICES FOR PRODUCT DEVELOPMENT
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- ❖ COLLABORATIVE PRODUCT DEVELOPMENT
- ❖ CONCURRENT ENGINEERING
- ❖ RISK MANAGEMENT
- ❖ STAGES OF PRODUCT DEVELOPMENT

INTRODUCTION- PRODUCT DEVELOPMENT

- ❖ New era of fundamental changes in products, services and delivery of products - *Satellite phones, the Internet, intelligent machines, biotechnology, electronic commerce.*
- ❖ Customer requirement - customized products with more performance and options at a lower cost
- ❖ Manufacturing Industries and business organizations – need to remain competitive, react quickly to prevailing market conditions and maximize the utilization of resources.
- ❖ Product development - better strategies and methods that are flexible, fluid, and promote simplicity.
- ❖ Key - Systematic application of best practices that focus on reducing technical risk in a changing environment.

LIGHT SPEED CHANGE

- ❖ Time is a scarce resource. The future promises to be even more of a challenge.
- ❖ Traditional approaches that a company might use to remain competitive are no longer appropriate .
- ❖ Focus on product development efforts not only on a product's function, project schedules and deadlines, and cost, but also in other life cycle issues such as customization, technical risk, simplicity, producibility, quality, innovation and service.
- ❖ Customer requirement - value
- ❖ Value is expressed as the relative worth or perceived importance of a product to the customer . It can be measured by a series of critical marketing parameters such as innovation, styling, performance, cost, quality, reliability, service, and availability. Customers define value in relation to their personal expectations for the product or service offered. The more the company exceed those expectations, the more value the company have delivered.

- ❖ Creating innovative solutions - greatest opportunity for distancing yourself from the competition.
- ❖ Innovation, however, does not come cheap. A company that is committed to innovation should have a high tolerance for many failures. A company has to be willing to put itself at risk everyday through innovation. Small, incremental changes of the past won't work in today's marketplace
- ❖ Goal of product development - identify technical risks early in the development process and implement methods to minimize their potential occurrence and effect. Best practices provide the framework and systematic process for success.

NEW BUSINESS MODELS AND PRACTICES

- ❖ CAD systems - replace drawing tables.
- ❖ Presentation software such as Powerpoint - replaced the overhead transparency.
- ❖ Technology - enhanced a particular process without too much disruption, but the benefits are equally modest. Technology's true potential is realized when it is employed in innovative ways that change traditional business practices.
- ❖ New Economy - name for the future business environment consist of new business models using the Internet to interact with customers and suppliers. It will be a technology driven, knowledge rich, collaborative interactivity.
- ❖ Computers and the appropriate software - enhance collaborative product development through decision support systems, engineering analyses, intelligent databases, etc. Computers will improve collaboration independent of time and place.

❖ Technology - more new customized products to be introduced more rapidly resulting in shorter product lives. For example, every time a new microprocessor is introduced to the market, new laptops are designed with the new product. A typical company may have to introduce one or two new notebook computers per month, leaving their two-year-old laptops worthless for sale.

❖ The tremendous increase in information and the knowledge - increasing the role of design specialists or experts. Thus, design team members will be selected for specific areas of expertise such as knowledge in circuit design, programming skills, composite materials, or electronic assembly, financial markets, supply chain rather than for their generalized degrees in business, electrical, computer, mechanical, industrial, or manufacturing engineering.

❖ Key - Ensure effective collaboration between these many different specialists even though each has unique locations, objectives, methods, technologies and terminology.

TRENDS AFFECTING PRODUCT DEVELOPMENT

- ❖ Rate of innovation –
 - Critical design factor in the success of most products.
 - First innovative product is often the competitive winner in a “winner take all” market.
 - Time constraints will become an even greater factor in the development and production of new innovative products.
- ❖ Software tools, rapid prototyping, and virtual reality –
 - Competitive advantage is gained in the design process when software products or tools can improve or shorten product development and enhance service support.
 - Software tools such as computer aided engineering (CAE), expert systems, virtual reality, and prototyping tools can assist the design team in customer needs assessment, innovation, product layout, selection of components or materials, simulation testing and simulating the manufacturing process.

- Virtual reality utilizes interactive graphics software to create computer generated prototypes and simulations that are so close to reality that users believe they are participating in a real world situation or observing a real final product.
- ❖ Mass customization and customized "on-demand" production
 - Mass customization is the ability to provide specific product or service solutions while still realizing the benefits of large scale operations.
 - “Build to order“ or “on demand” production, which requires manufacture of a customer, specified product only after it is ordered. This requires manufacturing to build many more versions of similar products, i.e. flexibility.
- ❖ Core competency, partnerships and outsourcing
 - Core competencies can be in any area of design, marketing, manufacturing, or service. These are the critical areas that make the company unique or better than the competition.

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- The logo of Galgotias University is a stylized, circular emblem. It features a central white 'G' shape that is partially filled with a gradient of colors: yellow at the top, blue in the middle, and red at the bottom. The 'G' is surrounded by a larger, semi-transparent circular border that also follows the same color gradient.
- ❖ Internet and telecommunication
 - ❖ Electronic commerce
 - ❖ Flexibility and agility
 - ❖ Global manufacturing
 - ❖ Automation
 - ❖ Environmental consciousness

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Global Business Perspective

- ❖ Anticipate future market demands
- ❖ Manage global relationships
- ❖ Reduce time to market
- ❖ Excel in customer service

Best practices for product development

- ❖ Improves communication among all the members of the product development team.
- ❖ Provides “what to” and “how to” recommendations that have been proven to be successful in industry.
- ❖ Develops scientific recommendations for both current and future product development .
- ❖ Helps measure the progress of the product development process and the technical risk of new technologies/methods.

COLLABORATIVE PRODUCT DEVELOPMENT

- ❖ Process of people working in teams to pursue design innovation.
- ❖ Information, ideas, and problem solving are actively shared among the team. It can be synchronous, where team members meet together either face to-face or via audio or video conferencing tools. Collaboration can also be asynchronous, where product development personnel log onto a computer network at different times and locations leaving their contributions for others to see and discuss.
- ❖ On-line product development materials should be up to date, well organized and easy to use.
- ❖ Product development project should be started with a short task or two to get each member of the team involved in collaboration and become familiar with the use of new technology.
- ❖ The project leader should lead and encourage participation and keep a close watch on participation, especially during the beginning of the project.

Group Assignment

Part 1

- Prepare a baseline project schedule for cooking the dinner. Show the schedule in Gantt chart form.
- You will need to identify the dependencies among the tasks. State your assumptions.

Part 2

- Prepare an accelerated project schedule.
- Explain why you believe that the accelerated project is feasible. What are the risks?



References

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The background features a large, faded watermark of the Galgotias University logo. The logo consists of a circular emblem with three curved, overlapping bands in shades of yellow, blue, and red, creating a sense of motion or a stylized 'G'.

Thank you

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