after the introductory period.PLM software can be used to automate the management of product-related data and integrate the data with other business processes such as enterprise resource planning There are three phases of PLM application: Beginning of life, which involves design and development; Middle of life, which involves working with suppliers, managing product information and warranties; and End of life, which involves strategies for product discontinuance, disposal, or recycling.Some products do not exhibit life cycles: wooden pencils; paper clips; nails; knives, forks, and spoons; drinking glasses; and similar items.In the growth phase, it is important to obtain accurate projections of the demand growth rate and how long that will persist, and then to ensure that capacity increases coincide with increasing demand.For example, duct tape and baking soda are two products that have been employed well beyond their original uses of taping heating and cooling ducts and cooking.Some toys, novelty items, and style items have a life cycle of less than one year, whereas other, more useful items, such as clothes washers and dryers, may last for many years before yielding to technological change.For example, introducing new high-tech products or features during peak back-to-school buying periods or holiday buying periods can be highly desirable.Wide variations exist in the amount of time a particular product or service takes to pass through a given phase of its life cycle: some pass through various stages in a relatively short period; others take considerably longer.Product Life Cycle Management Product life cycle management (PLM) is a systematic approach to managing the series of changes a product goes through, from its conception, design, and development, through production and any redesign, to its end of life.Although PLM is generally associated with manufacturing, the same management structure can be applied to software development and services.Strategically, companies must carefully weigh the trade-offs in getting all the bugs out versus getting a leap on the competition, as well as getting to the market at an advantageous time.In the decline phase, decisions must be made on whether to discontinue a product or ser- vice and replace it with new ones or abandon the market, or to attempt to find new uses or new users for the existing product or service.It is important to have a reasonable forecast of initial demand so an adequate supply of product or an adequate service capacity is in place.Over time, design improvements and increasing demand yield higher reliability and lower costs, leading the growth in demand.Examples include baking soda, duct tape, and vinegar.The advantages of keeping existing products or services can be tremendous.For example, as older products are phased out, services such as installation and repair of the older products also phase out.In the next phase, the product or service reaches maturity, and demand levels off.The maker of Legos has found a way to grow its market as described in the following reading.Con- sequently, costs tend to be very low, and additional resource needs and training needs are low.That includes data pertaining to production processes, business processes, people, and anything else related to the product.Generally, costs are low and productivity is high.New uses for products or services can extend their life and increase the market size.The same workers can produce the product or provide the service using much of the same equipment, the same supply chain, and perhaps the same distribution channels.However, most new products do. Some service life cycles are related to the life cycles of products.PLM incorporates everything related to a particular product.Often it is a matter of the basic need for the item and the rate of .technological change.Few, if any, design changes are needed