“Synchronizing transportation activities across a product’s sales cycle: a conceptualization”

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Synchronizing transportation activities across a product's sales cycle: a conceptualization

Abstract

Intensifying competition, rapidly evolving technology, added product complexity, spiraling fuel costs, and changing customer preferences coupled with increasing demands on productivity, continuity of supply, cost reduction, and customer service have significantly broadened the scope and highlighted the importance of transportation, thereby elevating its stature at the top-management level. Today's transport executives command greater decision-making authority, are more active in developing and implementing strategies for different departments in the company, and participate in formulating and implementing corporate policies and strategies. In order to effectively perform and coordinate these new responsibilities with their traditional tasks, transportation managers will require a reconceptualization of their role. An urgent need exists among transportation executives for an integrative, conceptual model to serve as an aid in decision making. Specifically, there is a necessity for a set of carefully conceived transport activities sequenced according to some workable framework. The product life cycle concept represents such a guideline. It can integrate, coordinate, and relate the effects of various transportation practices to a dynamic business environment, thereby assisting transport executives in the effective and timely performance of their ever-expanding duties and responsibilities for the optimal benefit of the company. In the following article, the authors present a product life cycle-transportation activities model, which consists of 78 transport operations sequenced according to five stages of a product's sales trend.

Keywords: product life cycle-transportation activities model, physical distribution or logistics, transportation, product life cycle, strategic transportation planning.

Introduction

In order for transportation executives to successfully perform their role in an organization, they must develop effective transport operations and implement these in a timely fashion. The primary objective of these actions is to optimize the company's profitability, thereby enhancing its long-run survival. This goal can be accomplished through achieving an optimal balance between the firm's desired level of customer service and corresponding costs. However, this task has become extraordinarily difficult due to rapidly evolving technology, added product complexity, spiraling fuel costs, changing customer preferences, and intensifying competition coupled with increasing demands on productivity, continuity of supply, cost reduction, and customer service.

Traditionally, traffic managers may have found themselves involved in such duties as having to develop delivery schedules, identify preferred transport modes and carriers, and provide product-design engineers information concerning impact of alternative product designs on the company's transportation system. Other situations may have required them to monitor carrier performance relative to a desired customer service level, use a premium transport mode to maintain a desired customer service level, identify transportability factors critical to the success of the new product, monitor sales research reports, and formulate procedures for creating an internal freight bill auditing system. Further, the transportation executives may have had to evaluate cost-service trade-offs in terms of modes and carriers, negotiate with competing carriers to secure lower rates, and initiate planning for expansion of the traffic system (Sampson et al., 1990; Glaskowsky et al., 1992; Tompkins and Harmelink, 1993; Robeson and Capacino, 1994; Bowersox and Closs, 1996; Wood and Johnson, 1996; Blanchard, 1998; Lambert et al., 1998; Johnson et al., 1999; Stock and Lambert, 2001; Bowersox et al., 2002; Coyle et al., 2003; Ballou, 2004; Christopher, 2005; Coyle et al., 2006; Murphy and Wood, 2008).

1. Development of the problem

The role of transport managers is changing and evolving as they are continually confronted with more challenging demands from within their department, other functions in the firm, and various external groups. Today's transportation executives do more forecasting and planning, command greater decision-making authority, are more active in developing and implementing strategies for different departments in the company, and participate in formulating and implementing corporate policies and strategies (Collins and Whybark, 1985; Bowersox et al., 1989; Bowersox et al., 1992; Sutton, 1993; Bowersox and Closs, 1996; Kahn and Mentzer, 1996; Bowersox et al., 1999a; Ballou et al., 2000; Bowersox et al., 2002; Coyle et al., 2006; Zacharia and Mentzer, 2007; Murphy and Wood, 2008; Hofmann, 2010). As a result of this significant broadening of the scope of traffic and increased recognition of its importance (Bowersox et al., 1989; Bowersox et al., 1992; Morash et al., 1996; Spear, 1997; Daugherty et al., 1998; Bowersox

et al., 1999a; Lynch et al., 2000; Zhao et al., 2001), many firms have created top-management positions for transport managers, thereby elevating its stature at the corporate level (Bowersox et al., 1992; Lambert, 1992; Sutton, 1993; Bowersox et al., 1995; Lambert and Burduroglu, 2000; Lambert et al., 2008).

In order to effectively perform and coordinate these new responsibilities with their traditional tasks, transportation executives will require a reconceptualization of their role. Their functioning as an indispensable link within the firm will also necessi-tate revision. Finally, it will be necessary for traffic managers to think and act in a more strategic and corporate manner (Bowersox et al., 1992; Kahn and Mentzer, 1996; Morash et al., 1996; Spear, 1997; Lynch et al., 2000; Rodrigues et al., 2004; Stank et al., 2005; Lambert et al., 2008; Hofmann, 2010).

A need exists among transport executives, therefore, for an integrative, conceptual model to serve as an aid in decision making. Specifically, there is a need for a set of carefully conceived transportation activities sequenced according to some workable framework. The product life cycle concept represents such a guideline. It can integrate, coordinate, and relate the effects of various traffic practices to a dynamic business environment, thereby assisting transport managers in the effective and timely performance of their ever-expanding duties and responsibilities for the optimal benefit of the company.

2. Product life cycle concept

The product life cycle (PLC) is a generalized model depicting the unit sales trend of some narrowly defined product from the time of market entry until withdrawal by the firm. Schematically, the PLC can be approximated by a bell-shaped curve, which is divided into several stages. Most writers reference a four-stage PLC – introduction, growth, maturity, and decline (Kotler and Keller, 2012).

In discussions with various business executives, however, the authors found a five-stage PLC is more appropriate for planning purposes. Many strategic and operational decisions must be made at the corporate and functional levels of an organization before a new product can even be placed on the market (Perreault, Jr. et al., 2011). Hence, a PLC curve with five phases will be adopted: design, introduction, growth, maturity, and decline. Table 1 (see Appendix) summarizes the major characteristics of each stage in the PLC, while Figure 1 depicts typical unit sales and profit curves.

The PLC does *not* automatically occur. It is a result of the interaction of a number of variables. In addition to the company's marketing efforts, the PLC is shaped by both market demand factors and other external conditions, which are usually beyond the firm's control (Swan and Rink, 1982; Kotler and Keller, 2012). The time length of any stage and the shape of the overall PLC will vary for different products and industries (Swan and Rink, 1982). But, even when a product's sales level off or start to decrease, the firm has several alternative strategies it can implement to prolong or revive a product's sales (e.g., add extra features, target a new market segment, or develop a new promotional campaign) (Kotler and Keller, 2012; Perreault, Jr. et al., 2011).

3. Marketing, physical distribution, and product life cycle

Most marketing academicians and practitioners agree that the PLC concept is a crucial factor in the successful management of a company's marketing efforts (Rink and Swan, 1979). By identifying the stage a product is in, more effective marketing actions can be formulated (Kotler, 1976). But, only in the broadest sense has the PLC concept influenced the planning of marketing activities. Academicians initially focused on the general configuration of marketing mix variables (i.e., price, product, place or distribution, and promotion) across four PLC phases – introduction, growth, maturity, and decline (e.g., Buzzell, 1966; Clifford, 1965; Levitt, 1965). Kotler (1994) was one of the first writers to develop more specific, operational marketing recommendations for each of these four stages.

The dependence of physical distribution (PD), or logistics management, on a product's sales trend was initially recognized by Bowersox, Smykay, and LaLonde (1968). Early writers described several PD actions across these four PLC phases (Bowersox, 1974; Davis and Brown, 1974). However, these initial applications were too general and non-operational. Several years later, Lynagh and Poist (1977) partially overcame this problem by formu-lating a normative framework of 32 PD practices across the PLC.

4. Purpose

The purpose of this paper is to further refine the relationship between physical distribution and the PLC concept by focusing exclusively on the transportation function. In doing so, the authors will present and discuss 78 transport operations segregated by five PLC stages, which are more specific and operational than earlier efforts in this area.

5. PLC-transportation activities model

Using the PLC as a gauge of changing market conditions, a list of specific transport actions can be delineated for each stage. These lists, in turn, can serve as references for continuous reprogramming of transportation activities across a product's life span. The transition period from one stage to another (e.g.,

growth to maturity) can serve as a decision point for traffic management. Thus, during the PLC, there will be four decision points – design to introduction, introduction to growth, growth to maturity, and maturity to decline.

Transportation decisions are not made in a vacuum, independent of either of the other functional areas of the firm in general or of marketing strategy in particular. For example, transport cost and service availability affect which geographic market areas will be served and the size of these areas. Although a number of non-traffic factors enter into this decision (e.g., level of demand, promotion effort expended, availability of sales personnel and appropriate middlemen, and production capability), transportation availability and adequacy as well as cost will affect whether a product will be made and sold, where it can be sold, and the ultimate price of the product. Further, the selection of transport operations is dependent upon the basic transportability of the product. This includes such variables as deterioration, need for environmental control and protective packaging, loading efficiency, loss and damage factors, and the need for special equipment in transporting and loading/unloading the product (Lambert et al., 1992; Kahn and Mentzer, 1996; Bowersox et al., 1999a; Ellinger, 2000; Rodrigues et al., 2004).

The basic criterion for selection and slotting of transport practices within the authors' model is the department's contribution to company profitability. Across the five stages, traffic activities follow a logical path in conformance with the profitability criterion. Some actions initiated in one stage will continue to be pursued across the remaining stages. For example, building good relationships with carrier personnel might be initiated in the Design stage and continue throughout the PLC. Other operations will evolve and change over the stages. For example, in the Design stage, rates for the new product must be negotiated. Initially, small-volume rates are most important. As sales begin to rise, rates on larger volumes become important. In the Growth stage, aggressive negotiation for lower rates commences, and carrier rate increase proposals are monitored closely. In Maturity, separate billing for transportation and other services is needed to improve efficiency. The emphasis in negotiation is away from transport rates and toward the cost of accessorial services. Freight bills are monitored closely. With Decline, rapid adaptability to changing conditions becomes more important than rates. Freight bills are audited by an outside agency as retrenchment proceeds.

In the remainder of this paper, prescribed transportation activities will be presented and discussed for each of the five PLC stages. Additional transport practices consistent with the PLC classifications may occur to the reader.

6. Design stage

Design begins with the new product idea. These ideas may come from a variety of sources, but one of these sources will be the traffic department. New product ideas from carriers, suppliers, and customers as well as those generated by company transport personnel should be funneled through the transportation manager to initiate the investigation of the new product (Zacharia and Mentzer, 2007).

The transportation function is the exclusive traffic department in many firms. In other companies, it is the responsibility of the logistics department. Regardless of organizational structure, the transport executive should cooperate fully in providing information and expertise, especially in traffic matters, to the new product developers. Senior transportation specialists must monitor the progress of the new product in order to implement effective transport actions at the appropriate time. Input from the traffic department at the Design stage will be critical to future cost control efforts (Bowersox et al., 1999b).

By way of illustration, product transportability factors affect the ultimate success or failure of a new product. These factors are related to the movement of a physical product through the transportation system and include such things as product deterioration, necessity for environmental control (e.g., temperature, humidity, dust, and odor), load efficiency within the transport vehicle, loss and damage factors attributable to the nature of the product and the materials handling system, and the need for special equipment in the line haul and pickup/delivery. The department also develops and monitors close interdepartmental and inter-company relationships (Kahn and Mentzer, 1996; Ellinger, 2000). For example, it requests company product-design engineers to consider the impact of alternative product designs on the above-mentioned factors. The department also selects middlemen who can incorporate these traffic factors into their distribution systems with a minimum of disruption (Johnson et al., 1999).

The traffic executive assesses the abilities of the firm's private transportation capability, especially existing routes, load factors, and delivery schedules (Murphy and Wood, 2008). Where no slack capacity exists, or the company possesses no private transport option, the transportation manager initiates contacts with for-hire carriers. These initial contacts are first concerned with the selection of both transport modes and specific carriers (Bell and Iida, 1997). Of interest to the traffic manager in making these selections is a wide range of factors concerning the operating parameters of carriers (e.g., geographic areas served;

transit time duration and reliability to important markets; frequency of service; loss and damage record as well as general claims record; financial stability; availability of special services, including pickup and delivery, special equipment, and loading/unloading; and general cooperateveness of carrier personnel, including evaluation of company's previous experience with the carrier) (Ballou, 2004). As a result of examining these factors, a set of preferred modes and carriers will be identified.

In preliminary discussions with carriers, the transportation executive focuses on rates. He tries to resolve the new product's classification by highlighting the product's similarities and dissimilarities with existing products as well as its value, density, handling characteristics, and myriad of other rate-determining variables. Of special interest to the traffic manager is the availability of small-volume rates and economy rates on larger-sized shipments. Minimum weights should be identified for these special rates as well as maximum weight restrictions (Blanchard, 1998). Finally, the transport department establishes protective packaging requirements in line with carrier specifications and desired customer service standards (Christopher, 2005).

Next, the traffic department scrutinizes applicable regulatory requirements. Pertinent here are restrictions on the use of private carriers as well as labeling and packaging requirements (Bowersox and Closs, 1996). For example, many organizations now consider the availability of transportation services operated by other corporate affiliates as an additional alternative in choosing modes because of recent regulatory changes. These and other regulations, including changes and proposed modifications imposed by government agencies, must be monitored throughout the PLC.

Finally, the transport executive develops delivery schedules for the newly established system of private and for-hire carriers. Some firms use sophisticated computer algorithms to establish cost-minimizing or profit-maximizing schedules. Regardless, the manager monitors this system initially to resolve interruptions and conflicts as the system comes on-line (Coyle et al., 2003). Thanks to these practices, the traffic department is in an effective position to support the fledgling product's launch.

7. Introduction stage

In spite of careful planning and testing of the transportation system, larger-scale distribution will highlight its problems and short-comings. The traffic executive cooperates closely with middlemen and monitors carrier performance. Delivery time duration and variability as well as delivered condition of the product will pinpoint difficulties that require corrective action. Carriers unable or unwilling to provide the required service should be replaced. On the other hand, in areas where lagging service can be improved, the transport department continues carrier contacts to develop good business relationships with them (Stock and Lambert, 2001). The routine task of monitoring carrier rate increase proposals should be delegated to lower management echelons.

The need for flexibility continues to pervade decision making until the market's acceptance of the new product is assured. The transportation manager should use direct shipment by air and/or motor carriers to avoid any unnecessary fixed investment. In addition, he should avoid any long-term commitments for transport equipment, facilities, and services (Harrington, 1996). If customer service levels for the new product can be maintained, consolidation programs should be considered to take advantage of existing transportation systems (Bowersox and Closs, 1996). Since customer service is important and large volumes are not yet available for shipment, the executive relies heavily on air and/or motor carriers.

The transportation department then establishes and modifies performance standards using feedback from the existing system. It commences negotiations with for-hire carriers for additional necessary service adjustments and for other conditions of service. Also, the department institutes expediting/tracing services provided by the carrier on selected routes (Johnson et al., 1999). The transport executive must continue to monitor sales research reports to anticipate how soon the expected increase in sales will occur. Finally, the manager assesses the need for return movement of the new product for recycling, servicing, or recall (Rogers and Tibben-Lembke, 2001).

8. Growth stage

During this stage, the traffic system for the product is plagued with congestion, confusion, and shortages created by rapid growth. Management must continually monitor system performance to minimize the effects of these problems (e.g., high demurrage charges caused by delays in loading/unloading common carrier vehicles) while maintaining desired customer service levels. Temporary market priorities should be established in response to unexpected surges in demand for the new product (Christopher, 2005). The transportation staff is expanded to handle the additional workload created by the increasing volume of orders.

In addition, the department's maintenance of standards becomes especially difficult. The transport executive recognizes the need for rapid and frequent deliveries. To maintain customer service standards, carrier performance becomes critical. The department monitors delivery schedules in regard to speed and dependability in order to maintain high levels of customer

service. It continues premium transport where necessary to maintain service standards. Least-cost traffic routes become secondary to the maintenance of customer service standards (Lambert, 1992; Innis and LaLonde, 1994; Knemeyer et al., 2003).

Carrier relations should be geared toward solving mutual problems (e.g., efficient vehicle loading). As the need for expediting/tracing service becomes widespread, the transportation manager continues to maintain close contacts with carrier personnel. He encourages carriers to expand their services (e.g., publish additional joint rates and more beneficial through routes, or establish a unique transit privilege) (Murphy and Wood, 1996). The transport executive next reviews the product's classification and rating as the product undergoes minor modifycations. Aggressive negotiations should be initiated by department rate specialists for lower commodity rates as volume increases and shipping patterns solidify. Where necessary, the traffic manager negotiates with competing carriers to secure lower rates or improved services (Coyle et al., 2006). Procedures for setting up an internal freight bill auditing system should be formulated. Also, more stringent loss and damage prevention programs should be developed as volume increases (e.g., color coded packages) (Bell and Iida, 1997).

The transportation department deemphasizes consolidation programs on many routes as volume increases negate the need for such programs. It substitutes more efficient forms of consolidation for others already in use (e.g., replace pool cars with transloading). Variable route delivery schedules are instituted to further improve customer service (Bowersox et al., 2002). As single-product transport becomes cost and service efficient, the department considers complete private operations as they become feasible on high-volume routes (Farris and Pohlen, 2008). Long-term commitments for transportation equipment, facilities, and services become economical and feasible (Harrington, 1996). Last, the department begins planning for traffic system expansion as new opportunities are identified. Most of these problems subside, or are replaced by a new set of challenges, when the company's product matures.

9. Maturity stage

A number of conflicting pressures come to bear on the transport executive in this stage. Sales have leveled off because of market saturation and competitive pressures. To offset saturation, the marketing manager looks for new markets and new opportunities through product modification and repositioning. He develops new promotional programs, initiates selective price cutting, and recommends product improvements in response to competitive pressures (Kotler and Keller, 2012). These tactics complicate the transport executive's job and create the desire to improve efficiency in operations. Close control of transportation costs become paramount in this phase as customer service policies are re-evaluated to provide competitive parity and more options (Wood and Johnson, 1996).

In order to fulfill this objective, the traffic manager phases out those carriers offering marginal service or operating at high unit costs. He becomes increasingly diligent concerning favorable mode and carrier cost-service trade-offs (Blanchard, 1998). For example, combination of modes (e.g., trailer-on-freight-car) may be used to provide significantly lower transport costs while incurring only a minor reduction in customer service standards. (Such a trade-off would have involved an unacceptable lowering of customer service if considered in an earlier stage in the PLC.) The transportation executive relies increasingly on rail with its lower rates as transport continues to shift toward volume movements. Purchasing for-hire service on a contractual basis should also be considered (Ballou, 2004).

The traffic department evaluates other cost-service trade-offs (e.g., shippers' associations, containerized freight shipments, distribution warehouses, and freight consolidation programs). It identifies those shipments and routes that provide beneficial outbound consolidations, but only where customer service does not suffer substantially. It also considers establishing an inbound-outbound consolidation system to further reduce costs where it produces only minor customer service penalties (Christopher, 2005). Back-haul opportunities in the private transportation operation should continue to be monitored to discover additional potential for cost savings. The department changes to fixed-cost delivery systems to become more efficient in terms of improved vehicle and driver utilization (Rogers and Tibben-Lembke, 2001).

Other cost savings, which have little or no effect on the level of customer service, should be pursued. Freight bills are monitored closely to produce significant recovery of over-charges by common carriers. The transport manager should consider switching to a pre-shipment audit procedure rather than the more conventional post-shipment audit to prevent most over-charges and improve cash flow. He requests separate billing of services and line-haul charges by carriers to further facilitate the audit procedure (Johnson et al., 1999). The traffic executive delegates routine cost-monitoring activities to first-line supervisors and dispatchers. Shipments should be expedited only on a request basis, and customers should be billed for the added costs of such requests (Bowersox and Closs, 1996).

The transportation department adopts other cost-reduction strategies that do not adversely impact customer service. It coordinates product and packaging modifications with product managers to reduce transport costs, minimize damage in handling, and improve customer service (Kahn and Mentzer, 1996). For example, an unassembled version of the product might be designed for a do-it-yourself segment of the market to take advantage of a new market opportunity and concurrently provide a significant reduction in traffic charges as well as handling and packaging costs.

Another means for reducing transportation cost and improving customer service simultaneously involves further expansion of the private carrier system, especially with specialized vehicles (Farris and Pohlen, 2008). A detailed analysis of driver activities can also be performed to further improve the efficiency of the private operation. The transport manager should consider available carrier services (e.g., transit privileges, pool cars, transloading, weight agreements, and demurrage agreements) to improve efficiency in the for-hire traffic system. He re-evaluates routing of shipments through the use of sophisticated routing algorithms to ensure the best combination of modes and carriers to provide the lowest cost consistent with established customer service levels (Glaskowsky et al., 1992). In rate or service disputes with for-hire carriers, the traffic executive holds out for protection of the company's interests. He should enlist the help of the legal department when necessary to defend the organization's rights against carriers.

10. Decline stage

The transportation manager closely monitors market research reports for a decrease in sales. The downward sales spiral will not be uniform across all markets nor will sales decline at a constant rate over time. As the product manager begins his retrenchment program, close coordination with the transport executive is needed. Strategic changes across organizational functions should be matched with selective decreases in sales (Bowersox et al., 2002).

The traffic department simplifies the transportation system to maintain minimum levels of customer service, but at the same time to provide flexibility to withdraw rapidly from a given market segment when necessary. It phases out private transport operations and shifts unused capacity to other burgeoning products. The department relies on common carriers to provide necessary traffic service (Stock and Lambert, 2001). It aggressively pursues freight consolidation programs begun previously to keep rates low as transportation tonnage diminishes. It also develops and refines consolidation plans to pool shipments into selected markets on particular days (Wood and Johnson, 1996).

In a final cost recovery effort, the transport manager employs an outside agency to audit freight bills for a second time under the customary 50-50 recovery fee basis. He also directs the traffic staff to plan and implement a system for spare parts and product servicing (Coyle et al., 2006). The executive establishes a contingency plan for transporting future product recalls (Rogers and Tibben-Lembke, 2001). Once the firm's top management decides to drop the product, the transportation department begins an orderly abandonment of the product's traffic system.

Conclusion

By using the authors' product life cycle-transportation activities model, managers can determine the set of prescriptive transport actions they should consider implementing in each stage of a product's sales cycle. These lists, in turn, can serve as references for continuous reprogramming of traffic operations across the PLC. In formulating and executing more effective and timely transport activities, at least two factors need to be considered – corporate objectives and changing conditions in the marketplace. The actions of a firm are determined by its objectives. Direct linkage between corporate and transportation objectives gives meaning to the contributions from traffic executives. Planners and doers both know what is expected of the transport department as well as how these efforts relate to the broader objectives of transportation and the organization. Flexibility is incorporated into the traffic plan by anticipating changes in market conditions. Using the PLC concept as a guideline, these basic changes can be anticipated as a product moves through the stages of its sales cycle. Transport planners knowing what they want to take place can gain this desired flexibility by fitting transportation actions to PLC phases. The emphasis in this type of planning is on timing the changes in traffic operations to produce the best utilization of company resources. The contingency transport plan says, in effect, "when this happens, transportation will do this, or these alternatives are available."

Adoption of the authors' PLC-transportation activities model can proceed piecemeal. Most urgent, however, is transport management's attention to products in their early PLC phases (i.e., Design, Introduction, and Growth). These are more volatile and often require radical departures from operational routines. During a stable Maturity stage, seasonal patterns may be more decisive on transportation activities. When sales decline, top management's attention shifts to successor products. After some trial adoptions, if results argue in favor of more extensive use of the authors' model, traffic executives can incorporate it into departmental objectives and policies. If other functions' operations follow these same guidelines, its effectiveness is maximized.

Finally, the authors' model, which depicts transport in a systems perspective, makes explicit transportation's relationship with other departments of the firm in the decision-making process. This is especially timely, because transportation is assuming top-management status in many corporations. Traffic managers interact almost daily with executives from other functions either on an individual basis or as part of cross-functional teams. Since one of the major advantages of the PLC concept is it helps integrate thinking in all functional areas (Kotler and Keller, 2012), the authors' PLC-transportation activities model can be invaluable in illustrating the interrelationships of traffic with the other departments in firm. This can assist executives of transport and other functions to dovetail their operations. However, the overall approach and the constituent details are *not* universals, but a point of departure for custom-tailoring to the macro-environmental conditions confronting the organization.

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Appendix

Table 1. Major characteristics of each PLC stage

Design stage	Design stage encompasses all those activities initiated prior to the actual introduction of the product or service to the market. The company is distributing and selling a product for which it has not previously developed a marketing system. Planning represents a period of great uncertainty. The costs involved in creating the system are large. But, at this point, no sales of the product have been made. Experimentation with determining the appropriate levels for the marketing variables may involve a test market in this stage.
Introduction stage	Introduction stage begins with a full-scale market introduction of the new product or service. The uncertainty of the new product's ultimate success or failure creates a desire to maintain flexibility in marketing activities. Systems are redesigned and modified to smooth out problems as they are discovered. Close monitoring of internal reports is critical both to identify these problems and to discover at the earliest possible moment indications of the ultimate destiny of the product. Product availability to the market is a crucial factor at this point in time. Near the end of this phase, management will decide either to withdraw the product as a failure or to continue to support the product if its sales are increasing. If the decision to support is confirmed, then performance standards and controls will be developed.
Growth stage	Growth stage is characterized by sales increasing at an increasing rate. Sales forecasting becomes critical to effective distribution of the product. Performance standards are implemented and maintained. Marketing strategy focuses first on encouraging potential new customers to try the product, and later in this stage, on developing brand loyalty with customers. As competitors begin to enter the marketplace, customer service becomes critical as a competitive tool. For example, orders are monitored closely to assure speedy and dependable delivery. Cost is secondary in importance.
Maturity stage	In the maturity stage, sales level off. Extremely vigorous competition yields to price-cutting tactics and large increases in promotion to maintain sales levels. To minimize the impact on profits, a company-wide pursuit for efficiency is initiated. Also, new marketing opportunities in the form of product modification and repositioning are sought. Product improvements are encouraged in quality, style, and accessorial features to become more competitive in existing markets and to enter new markets. However, the pursuit of efficiency is paramount.
Decline stage	Decline stage is characterized by a rapid decrease in sales. The objective to be pursued here is one of minimizing risk and maintaining flexibility. Marketing strategy is one of retrenchment (or pulling back from declining markets), but at the same time, watching for market opportunities in both those segments abandoned by competitors and those composed of significant groups of brand loyal customers. The available number of product varieties and promotional expenditures are minimized in anticipation of abandonment.

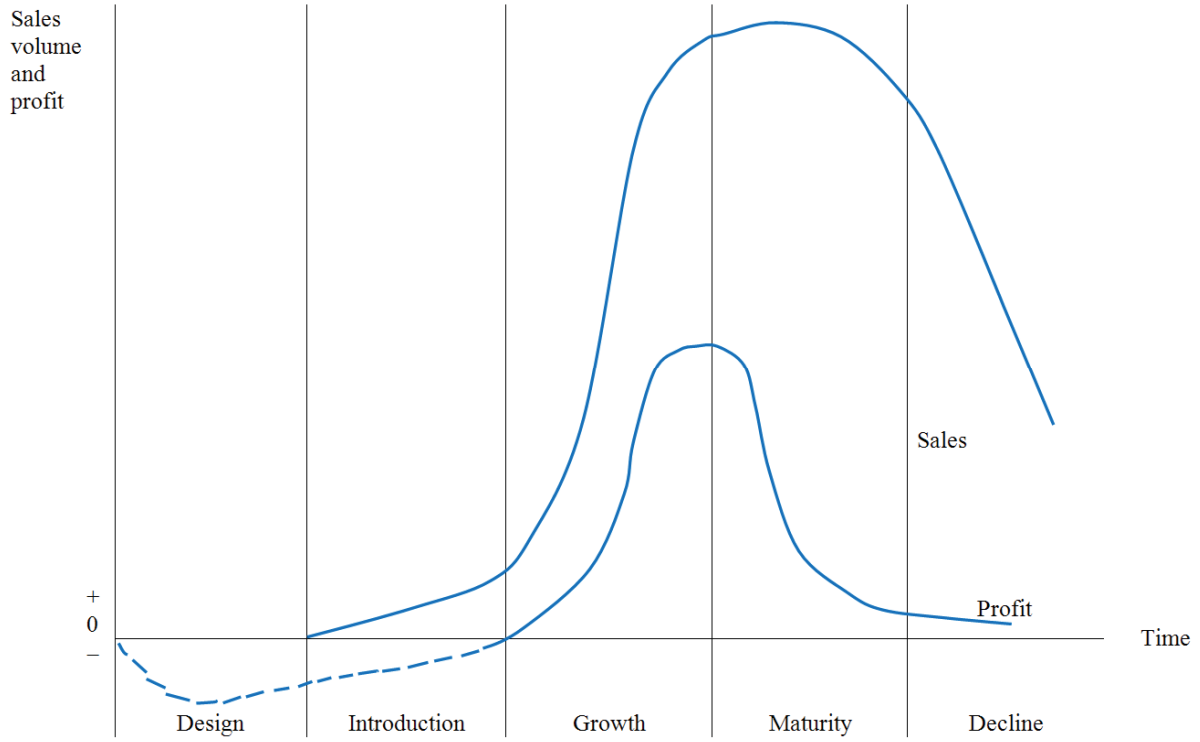

Fig. 1. A generalized product life cycle curve