VILNIUS GEDIMINAS TECHNICAL UNIVERSITY

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TECHNOLOGY MANAGEMENT AND PRODUCT MARKETING MIX

TECHNOLOGIJŲ VADYBA IR PRODUKTO RINKODAROS PROGRAMA

Final master work

Pramonės inžinerijos ir vadybos studijų programa

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Kalba
☐ lietuvių
☒ užsienio

Summary

We live in turbulent times. Success in today's challenging economy marked by constant technological innovations, global competition and tight markets. A technological development and innovations often modifies the basis of competition in a given industry and technology is, in many cases, one of the main sources of competitive advantage. But it doesn't means that it's enough for a manufacturing enterprises to understand technological part for successful business. Technology management in a company is completely connected with marketing management. Engineering cannot be taken only as a technical activity, but as a set of human and technological activities securing the efficiency of technical solution and profitability in the given business. The marketing environment affects the solutions of the technology management and technological environment effect marketing management decisions. But the trouble is that most companies' lack much in the way of an effective technological management and marketing program, and worse yet, seem at all doesn't care about it effective utilization.

In the first, theoretical part of the final work are analysed relationships between the technology management and the marketing mix. In the second one, JSC "Metos" technological strategy, its advantages and the place of the conveyor dishwashing machine in product life cycle. And lastly, there are presented improved marketing mix considering company's technological strategy and product place in product life cycle.

Meaningful words: technology management, product life cycle, marketing mix.

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Anotacija

Šiandien įmonėms tenka dirbti labai staigiai besikeičiančioje aplinkoje. Sėkmė šių dienų iššaukiančioje ekonomikoje yra pažymėta pastoviom technologinėm naujovėm, globaline konkurencija ir siaura rinka. Technologiniai patobulinimai ir nauji produktai dažniausia keičia konkurenciją tam tikroje pramonės šakoje, ir daugeliu atvejų tai yra pagrindinis konkurencinio pranašumo šaltinis. Bet tai nereiškia, kad sėkmingai pramoninėms įmonėms dirbti, užtenka suprasti tik technologinę įmonės veiklos pusę. Įmonių technologijų vadyba yra visiškai susieta su marketingo vadyba. Inžinerija negali buti suprantama tik tai kaip techninė veikla. Tai turi būti suprantama kaip žmogaus ir technologijų veiklos komplektas, saugantis technologinių sprendimų produktyvumą ir pelningumą versle. Marketingo vadyba, kaip ir technologijų vadyba įtakoja bendrą įmonės našumą ir pelningumą. Bet didžiausia problema yra ta, kad daugelis įmonių stokoja efektyvios technologijų vadybos ir marketingo programos, dar daugiu atrodo net nesistiegia panaudoti jų efektyviai.

Pirmoje, teorinėje magistro baigiamojo darbo dalyje yra analizuojamos sąsajos tarp technologijų vadybos ir marketingo programos. Antroje – UAB “Metos” technologinė strategija, šios strategijos privalumai ir konvejerinės indų plovimo mašinos vieta produkto gyvavimo cikle. Galiausiai, baigiamajame darbe pateikiama patobulinta marketingo programa atsižvelgiant į įmonės technologinę strategiją ir produkto vietą produkto gyvavimo cikle.

Reikšminiai žodžiai: technologijų vadyba, produkto gyvavimo ciklas, marketingo programa.

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INTRODUCTION

Success in today's challenging economy – marked by constant technological innovations, global competition and tight markets - means more than planning for success. A technological development and innovations often modifies the basis of competition in a given industry and technology is, in many cases, one of the main sources of competitive advantage. Staying competitive today means creating, driving and sustaining competitive advantage. And it's not enough just to have good results today and think that you will drive company's business successful tomorrow. The development of technologies and products, like the growth of organisms, has different stages and enterprises must continuously upgrade technologies and products due to technological and economic progress.

Technology management in a company (development, technical activities and production) is completely connected with marketing management. Engineering cannot be taken only as a technical activity, but as a set of human and technological activities securing the efficiency of technical solution and profitability in the given business. Marketing management like technology management influences total efficiency and profitability of company. On the basis of marketing can be decided what products and services can be insured, which goods are useful to produce and which is useful to stop. To reach the economic and marketing aims on final market, the management of the company uses marketing mix.

The marketing environment affects the solutions of the technology management and technological environment effect marketing management decisions. To utilize technological strategy effectively, product marketing mix must be created, considering advantages provided from pursued technological strategy. In other way company can't gain the maximum benefit form pursued technological strategy, what's doing the job without the essence. But the trouble is that most companies' lack much in the way of an effective technological strategy and marketing program, and worse yet, seem at all doesn't care about it effective utilization. A business without an understanding relationships between technological strategy and marketing management will inevitably lead to a number of project decisions made independently of one another, there is no focus and no expectable results.

This master degree theses goal is to improve product marketing mix, considering company's technological strategy, and product place in product life cycle. The objects of the thesis are:

1) to analyse JSC "Metos" technological strategy and advantages from pursued technological strategy;
2) to analyse company's particular product place in product life cycle;
3) to analyse marketing mix strategies considering product life cycle stages.

1. RELATIONSHIPS BETWEEN TECHNOLOGY MANAGEMENT AND PRODUCT MARKETING MIX

1.1. INTEGRATING TECHNOLOGY AND STRATEGY

Technology management has played a crucial role in all industries throughout history. The development of technology allows mankind to produce products and serve services at progressively lower cost of production in real terms, and therefore at progressively lower prices, improving their availability, accessibility and utilization worldwide. As new, cost-efficient technologies are commercialized the cost of production and product price decrease. This leads to the question: Why should mining companies invest in technology development if the result is a decrease in the product price? The answer is - to achieve competitive advantage, where the application of technology enables one or more commodity producers to gain a cost advantage over their competitors, at least for a period of time. The more sustainable and longer term, the greater the competitive edge achieved. And there are many sources of competitive advantage that can result from the development and application of technology: manufacture and sell a product or service at a lower cost than your competitors or to differentiate your product or service and charge a higher price, to improve company's value chain adding value to a goods or services sold by a company and etc.

We live in turbulent times. Technology advances at an ever-increasing pace; customer and market needs are constantly changing; competition moves with lightning speed; and globalization brings new players and opportunities into the game. For a long time, firms seem to have expanded mainly by taking advantage of every opportunity the market offered; some companies are now increasingly concerned with capitalizing on the technological capabilities. A technological development and innovation often modifies the basis of competition in a given industry and technology is, in many cases, one of the main sources of competitive advantage. After the era of market-led strategies, some experts are announcing the coming of the era of technology-based strategies, even predicting that latter are generally more successful than the former. More than ever, businesses need a product innovation and technology strategy to help chart the way. The trouble is, most companies' lack much in the way of an effective technology strategy, and worse yet, seem at a loss when faced with developing such a strategy. Undertaking product innovation without a strategy is like running a war without a military strategy. There's no rudder, there's no direction, and the results are often highly unsatisfactory. You simply drift. A business without a technology strategy will inevitably lead to a number of project decisions made independently of one another. The result is that the business dissipates its development resources across a number of initiatives that are not strategically

important, or worse yet, finds itself in unrelated or unwanted markets, products and technologies; there is no focus [2, 14, 29].

Technology in the consumer marketplace of today and tomorrow is broad, deep and diverse and can be regarded as a cornerstone of a manufacturer's strategy and success. In line with that, it can be said that innovation is the key to growth, with many companies coming to rely more and more on R&D to deliver that innovation. Many companies today claim to be built around progress, and that term applies not just to a new product development but to projects directed at improving quality and productivity and reducing costs. Extending even further, such progress incorporates the product itself as well as marketing strategies. To address these platforms and move ahead, companies must look to achieve three critical areas: incremental innovation, breakthrough innovation and customer-directed R&D. Customer insight, taken with the innovative process, is essential and should be considered a manufacturer's core competency. Working with the innovative process and ensuring that all teams within a company (strategy planning, R&D, engineering, marketing, operations and others) can develop a high quality product economically for commercial production lets for companies to achieve, sustain competitive advantage and to gain benefit for all stakeholders [1, 13].

Positive versus negative views. The positive view of strategy is concerned with the firm's actual strategy and how it comes to be. The normative view, on the other hand, is concerned with what the firm's strategy should be.

The positive view of strategy proposes that the firm's strategy reflects top-management beliefs about the basis of the firm's past and current success. These beliefs concern: (a) core competencies, (b) product market areas, (c) core values, and (d) people, as well as associations between these elements and firm's success. They can be viewed as the result of organizational learning process. They drive top management's efforts to establish a strategic process that will take advantage of this organizational learning. Not surprisingly, there is likely to be a good deal of inertia associated with the set of beliefs. Hence, to understand a firm's strategy, t is necessary not only to consider top management statements and assertions about the firm's strategy but also to observe what the firm actually does.

Product-market versus resource based views. The product-market view of strategy is primarily concerned with how the firm competes with its products and services. The resource-based view of strategy is concerned primarily with how the firm can secure the factors needed to create the core competencies and capabilities that form the basis for establishing and sustaining competitive advantage. Strategy is inherently a function of a quantity and quality of a firm's capabilities. Strategy without capabilities has no force. On the other hand, capabilities without strategy remain aimless. Strategy asks the question: How do competencies and capabilities help create and sustain competitive advantage? Strategy thus articulate the ways in which the opportunities that are created by the firm's capabilities can be exploited.

During the 1980s, normative views of product-market strategy received widespread attention. Porter's "five forces" analysis and "generic strategies" frameworks offered tools for explaining why some industries are inherently more attractive than others, for understanding firm's strategic position relative to that of its rivals, and for devising strategic actions that can affect the overall industry attractiveness and the strategic position of individual firms. Normative statement about core competence and capabilities-based competition during the early 1990s indicate the growing prominence of the resource-based view of strategy.

In the broadest sense, the term technology encompasses the entire set of technologies employed in the sequence of activities that constitute a firm's value chain. As Porter points out, any of these technologies can affect the industry structure or a firm's differentiation or cost position-and, therefore, its competitive advantage. Hence, it is important for the general manager to track the evolution of all the technologies that affect the firm's value activities. Designing technology strategy requires that the firm decide (a) how each technology can be used for competitive advantage, and (b) whether a give technology should be developed in-house or produced [3, 15, 16].

Technology life cycle. Technological change is one of the most important forces affecting a firm's competitive position, and research suggests that firm's find it difficult to respond to such changes. Integrating technology and strategy should therefore be a dynamic process, and it requires that the firm understand the dynamics of the cycle of the various technologies it employs.

Technology forecasting. An important element in integrating technology and strategy is the capacity to perform systematic technological forecasting. Underlying the capacity to forecast – and, perhaps more importantly, to see the relationships between technologically and continuously [1, 2, 3].

In today's competitive environment, technology is a resource of primary importance to most organizations. As such, its management must be part of the firm's overall business strategy. Technology strategy encompasses, but extends beyond, R&D strategy. It helps answer question such:

1. Which distinctive technological competencies and capabilities are necessary to establish and maintain competitive advantage?
2. Which technologies should be used to implement core products design concepts and how should these technologies be embodied in products?
3. At what level should the organization invest in technological development?
4. Should technologies be sourced internally or externally?
5. How should technology, product and innovation be organized and managed?

All these questions must be answered before the acting. But at first of all, it's very important to understand what the strategic technology management is and its role in overall business strategy. According theoretical studies technology strategy can be conceptualized as an evolutionary organizational learning process, as seen in Figure 1.

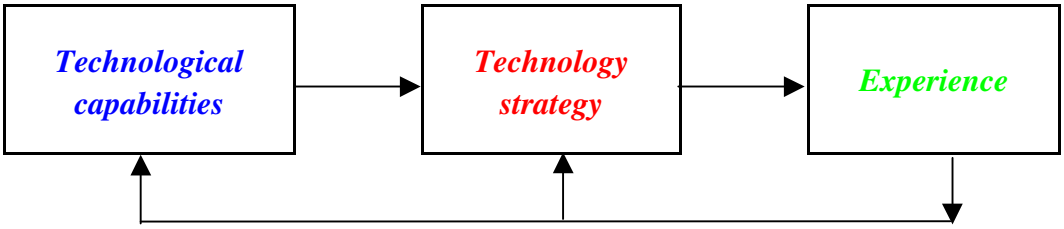


Figure 1. A Capabilities-Based Organizational Learning Framework of Technology Strategy [3]

The Figure 1 highlights the links between technological competencies, capabilities, technology strategy, and experience. Technology strategy is a function of a quantity and quality of technological capabilities that feed into it. The experience that results from enacting technology strategy similarly feeds back into technical capabilities and technology strategy, thus continuing the cycle [2, 3, 4].

From this chapter theoretical study, we clearly can see increasing importance of technology as a strategic variable in new day's business. The integration of technology in corporate strategy has become an important issue in strategy formulation processes. Once restricted to the domain of the engineers and scientist, technology has become today one of the most critical elements of competitive advantage. The status of technology in the manufacturing enterprise is a starting point. Moreover, as we see from theoretical studies, to move ahead, companies must look to achieve three critical areas: incremental innovation, breakthrough innovation and customer-directed R&D. Customer insight, taken with the innovative process, is essential and should be considered a manufacturer's core competency. Company's must work with the innovative process and ensure that all teams within a company (strategy planning, R&D, engineering, marketing, operations and others) develop a high quality product economically for commercial production, what will let for companies to achieve, sustain competitive advantage and to gain benefit for all stakeholders. In the second chapter of theoretical studies we will overlook the technological dimension of competitive strategy.

1.2. TECHNOLOGICAL DIMENSION OF COMPETITIVE STRATEGY

Technological changes ranks as one of the principal drivers of competition in industries. Emphasis in the management of technology field is largely given to internal conditions for success in R&D programs and to insuring required linkage between innovation and costumer needs.

Strategic technology management is important to organizations for several reasons. But one of the main things, the process helps organizations to develop a competitive advantage. Competitive advantage is a significant edge over the competition in dealing with competitive forces [2, 6].

- **Technology and Industry Structures**

The power of technology as a competitive variable lies in its ability to alter competition through changing industry structure. Viewing competition broadly, there are five fundamentals competitive forces (Figure 2) at work in any industry whose collective strengths determines the ability of firm to earn rates of return on investment in excess of the opportunity cost of capital.

Industry structure defines the arena and rules of the game in which competitive strategy seeks to best position the firm. The aim of competitive strategy is to create a defensible position for the firm against the competitive forces. What makes technology unique as a strategic variable is its considerable power to change the competitive rules of the game. Technology change can be a great equalizer that nullifies advantages of incumbents and creates opportunities for newcomers and followers.

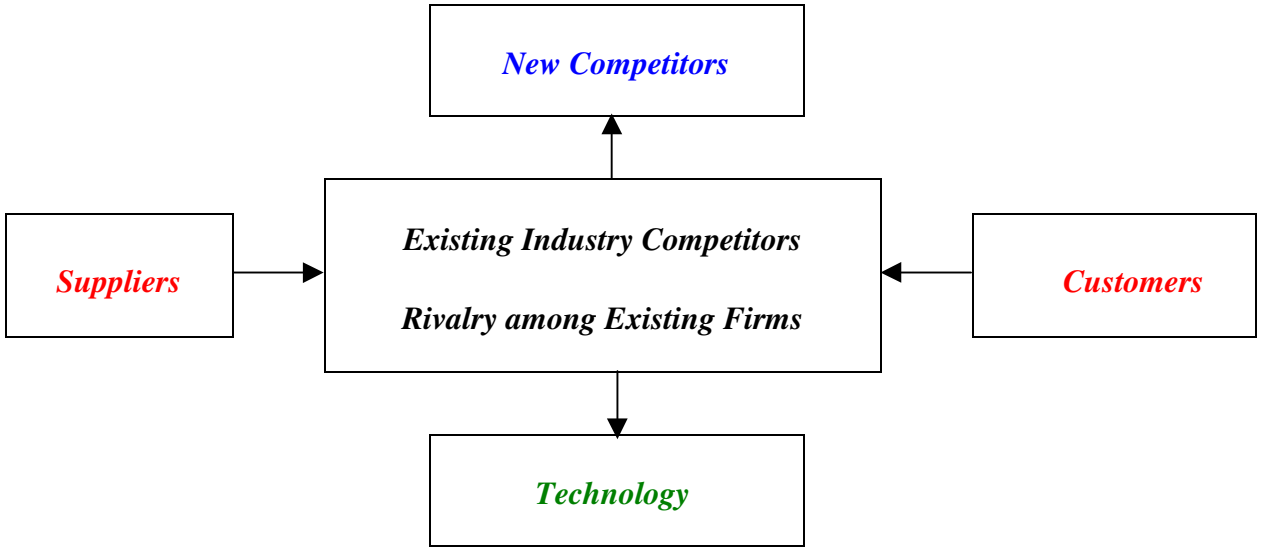


Figure 2. Forces Driving Industry Competition [13]

From Figure 2, we can see five driving forces in industry competition. These industry competition driving forces must be understood very clear and taken in to each company's strategic planning account.

Technology and Supplier Power. Technological change can shift the bargaining relationship between an industry and its suppliers:

- Eliminate the need to purchase from a powerful supplier group or, conversely.
- Allow substitute inputs to be used in the firm's product, which creates bargaining leverage against supplier.
- Allow the breakup of purchased systems into components that can be source individually.

Technology and Rivalry. Technology can alter the nature and basis of rivalry among existing competitors in an industry. Can raise or lower fixed costs and hence the pressure for cutting. This affects the likelihood of repeated outbreaks of rivalry.

Technology and Substitution. Technological changes create entirely new products or product uses that substitute for others. The battle to improve relative price/performance between industries producing close substitute is at the heart of the substitution process. A technological change that is not imitable can sometimes differentiate the firm's product or improve it cost position, whereas the same technological change would destroy industry structure if it were widely imitated.

Technology and Industry Boundaries. Technology can widen industry boundaries and variety of ways. It can reduce the transportation or logistical costs and thereby enlarge the geographic scope of the market. It must be stressed that technological change that creates new products established new industry boundaries where there were none previously [3, 4, 5, 13].

- **Generic Technological Strategies**

The second central question related with competitive advantage is a firm relative position within industry. Positioning determines whether a firm's profitability is above or below the industry average. A firm that can position itself well may earn high rates of return even though industry structure is unfavourable and average profitability of the industry is therefore modest.

The fundamental basis of above-average performance in the long run is sustainable competitive advantage. Though a firm can have a myriad of strengths and weaknesses vis-à-vis its competitors, there are two basis types of competitive advantage a firm can posses: low cost or differentiation. The significance of any strength or weakness a firm possesses is ultimately a function of its impact on relative cost or differentiation. Cost advantage and differentiation in turn stem from industry structure. They result from a firm's ability to cope with the five forces better than its rivals.

The two basis types of competitive advantage combined with the scope of activities for which a firm seeks to achieve them lead to three generic strategies for achieving above-average performance in an industry: cost leadership, differentiation, and focus. The focus strategy has two variants, cost focus and differentiation focus. The generic technological strategies are shown in Figure 3.

		Competitive Advantage	
		Lower Cost	Differentiation
Competitive Scope	Broad Target	***Cost Leadership***	***Differentiation***
	Narrow Target	***Cost Focus***	***Differentiation Focus***

Figure 3. Generic Technological Strategies [4]

The generic strategies, illustrated in Figure 3, involves a fundamentally different route to competitive advantage, combining a choice about the type of competitive advantage sought with the scope of the strategic target in which competitive advantage is to be achieved. The cost leadership and differentiation strategies seek competitive advantage in a broad range of industry segments, while focus strategies aim at cost advantage (cost focus) or differentiation (differentiation focus) in a narrow segment. The specific actions required to implement each generic strategy vary widely from industry to industry, as do the feasible generic strategies in a particular industry. While selecting and implementing a generic strategy is far from simple, they are the logical routes to competitive advantage the must be probed in any industry.

The notion underlying the concept of generic strategies is that competitive advantage is at the heart of any strategy, and achieving competitive advantage requires a firm to make a choice- if a firm is to attain a competitive advantage, it must make a choice about the type of competitive advantage it seeks to attain and the scope within which it will attain it. Being all things to all people is a recipe for strategic mediocrity and below-average performance, because it often means that a firm has no competitive advantage at all [1, 4, 5].

Cost Leadership. Cost leadership is perhaps the clearest of the generic strategies. In it, a firm sets out to become the low- cost producer in its industry. The firm has a broad scope and serves many industry segments, and may even operate in related industries- the firm's breadth is often important to its cost advantage. The sources of cost advantage are varied and depend on the structure of the industry. They may include the pursuit of economies of scale, proprietary technology, preferential access to raw materials, and other factors. Low- cost producer status involves more than just going down the learning curve. Low- cost producers typically sell a standard, or no frills, product and place considerable emphasis on reaping scale or absolute cost advantages from all sources.

If a firm can achieve and sustain overall cost leadership, then it will be an above-average performer in its industry provided it can command prices at or near the industry average. At equivalent or lower prices then its rivals, a cost leader's low- cost position translates into higher returns. A cost leader, however, can't ignore the bases of differentiation. If its product is not perceived as comparable or acceptable by buyers, a cost leader will be forced to discount prices well below competitors' to gain sales. This may nullify the benefits of its favourable cost position.

A cost leader must achieve parity or proximity in the basis of differentiation relative to its competitors to be an above-average performer, even though it relies on cost leadership for its competitive advantage. Parity in the bases of differentiation allows a cost leader to translate its cost advantage directly in higher profits than competitors'. Proximity in the differentiation means that the price discount necessary to achieve an acceptable market share does not offset a cost leader's advantage and hence the cost leader earns above-average returns.

The strategic logic of cost leadership usually requires that the firm be the cost leader, not one of several firms vying for this position. Many firms have made serious strategic errors by failing to recognize this. When there is more than one aspiring cost leader, rivalry among them is usually fierce because every point of market share is viewed as crucial. Unless one firm can gain a cost lead and "persuade" others to abandon their strategies, the consequences for profitability (and long-run industry structure) can be disastrous. Thus cost leadership is a strategy particularly dependant on pre-emption, unless major technological change allow a firm to radically change its cost position [2, 4, 5, 21].

Differentiation. The second generic strategy is differentiation. In differentiation strategy, a firm seek to be unique in its industry a long some dimensions that a widely valued by buyers. Its selects one or more attributes that many buyers in an industry perceive as important, and uniquely positions itself to meet those needs. It is rewarded for its uniqueness with a premium price. The means of differentiation are peculiar to each industry. Differentiation can be based on the product itself, the delivery system by which it is sold, the marketing approach, and a broad range of other factors.

A firm that can achieve and sustain differentiation will be an above-average performer in its industry if its price premium exceeds the extra cost incurred in being unique. A differentiator therefore must always seek ways of differentiating that lead a price premium greater than the cost of differentiating. A differentiator can not ignore its cost position, because its premium prices will be nullify by a markedly inferior cost position. A differentiator those aims at cost parity or proximity relative to its competitors by reducing cost in all areas that do not affect differentiation.

The logic of the differentiation strategy requires that a firm chose attributes in which to differentiate itself that are different from its rivals'. A firm must truly be unique at something or perceived as unique if it to expect a premium price. In contrast to cost leadership, however, there can be more than one successful differentiation strategy in an industry if there are a number of attributes that are widely valued by buyers [2, 4, 5, 21].

Focus. The third generic strategy is focus. This strategy is quiet different from the others because it rests on the choice of a narrow competitive scope within an industry. The focuser selects a segment or group of segments in the industry and tailors its strategy to serving them to the exclusion of others. By optimizing its strategy for the target segments, the focuser seeks to achieve a competitive advantage in its target segments even though it does not possess a competitive advantage overall.

The focus strategy has to variants. In cost focus a firm seeks a cost advantage in its target segment, while in differentiation focus a firm seeks differentiation in its target segment. Both variants of the focus strategy rest on differences between a focuser's target segments and other segments in the industry. The target segments either have buyers with unusual needs or else the production and delivery system the serves the target segment must differ from that of other industry segments. Cost focus differences in cost behaviour in some segments, while differentiation focus exploits the special needs of buyers in certain

segments. Such differences imply that the segments are poorly served by broadly targeted competitors who serve them at the same time as they serve others. The focuser can those achieve competitive advantage by dedicating itself to the segments exclusively. Breadth of target is clearly a meter of degree, but essence of focus is the exploitation of a narrow target's differences from the balance of the industry. Narrow focus in and of itself is not sufficient for above-average performance.

A focuser takes advantage of suboptimization in either direction by broadly targeted competitors. Competitors may be underperforming in meeting the needs of a particular segment, which opens the possibility for differentiation focus. Broadly targeted competitors may also overperforming in meeting the needs of a segment, which means that they are bearing higher than necessary cost in serving it. An opportunity for cost focus may be present in just meeting the needs of such a segment and no more. If focuser's target segment is not different from other segments, then the focus strategy will not succeed.

If a firm can achieve sustainable cost leadership (cost focus) or differentiation (differentiation focus) in its segment and the segment is structurally attractive, then the focuser will be above-average performer in the industry. Segment structural attractiveness is a necessary condition because some segments in an industry are much less profitable than others. There is often room for several sustainable focus strategies in an industry, provide that focusers choose different target segments. Most industries have a variety of segments, and each one that involves a different buyer need or a different optimal production or delivery system is a candidate for focus strategy [2, 4, 5, 21].

Each of the generic strategies involves a fundamentally different route to competitive advantage. The technological policies and generic competitive strategies are summarised and shown in Table 1.

Table 1. Technological Policies and Generic Competitive Strategies [13]

	Generic Strategy			
	Cost Leadership	*Differentiation*	*Focus-Segment Cost Leadership*	*Focus-Segment Differentiation*
Product Technological Change	Product development to reduce product by lowering material content, simplifying requirements	Product development to enhance product quality, features, switching costs	Product development to design in only enough performance for the segment needs.	Product design to exactly meet the needs of the particular business segment application.
Process Technological Change	Learning curve process improvement. Process development to enhance economies of scale	Process develop-met to support high tolerances, greater quality control, improve the ability to perform	Process development to tune production and delivery system to segment needs in order to lower cost	Process development to tune the product and delivery system to segment need in order to improve performance.

From Table 1 we can see the different routes of generic competitive strategies. Competitive advantage can be achieved in very different ways. We can't say that one of this ways is right and other one not. Company can't follow one of these competitive strategies blind. The specific actions required to implement each generic strategy vary widely from industry to industry.

Sustainability. A generic strategy does not lead to above-average performance unless it is sustainable vis-à-vis competitors, through actions that improve industry structure may improve industrywide profitability even if they are imitated. The sustainability of the three generic strategies demands that a firm's competitive advantage resist erosion by competitor behaviour or industry evolution. Each generic strategy involves different risks, which are shown in Table 2.

Table 2. Risk of the generic strategies [5]

Risks of Cost Leadership	***Risks of Differentiation***	***Risk of Focus***
Cost leadership is not sustained: • competitors imitate • technology changes • other bases for cost leadership erode	Differentiation is not sustained: • competitors imitate • bases for differentiation become less important to buyers	The focus strategy is imitated The target segment becomes structurally un attractive: • structure erodes • demand disappears
Proximity in differentiation is lost	Cost proximity is lost	Broadly targeted competitors overwhelm the segment: • the segment's differences from other segments narrow • the advantages of a broad line increase
Cost focuser achieve even lower cost in segments	Differentiation focusers achieve even greater differentiation in segments	New focuser subsegment the industry

As we see from Table 2, the sustainability of a generic strategy requires that a firm possess barriers that make imitation of the strategy difficult. Since barriers to imitation are never insurmountable, however, it is usually necessary for a firm to other a moving target to its competitors by investing in order to continually improve its position. Each generic strategy is also a potential threat to the others – as Table 1 shows, for example, focuser must worry about broadly targeted competitors and vice versa. Table 2 can be used to analyze how to attack a competitor that employs any of the generic strategies. A firm pursuing overall differentiation, for example, can be attacked by firms that open up a large cost gap, narrow the extent of differentiation, shift the differentiation desired by buyers to other dimensions, or focus. Each generic strategy is vulnerable to different types of attacks. In some industries, industry structure or the strategies of competitors eliminate the possibility of achieving one or more of the generic strategies. Occasionally no feasible way for one firm to gain a significant cost advantage exist, for example, because

several firms are equally placed with respect to scale economies, access to raw materials, or other cost drivers. Similarly, an industry with few segments or only minor differences among segments may offer few opportunities for focus. Thus the mix of generic strategies will vary from industry to industry.

In many industries, however, the three generic strategies can profitably coexist as long as firm pursue different ones or select different bases for differentiation or focus. Industries in which several strong firms are pursuing differentiation strategies based on different sources of buyer value are often particularly profitable. This tends to improve industry structure and lead to stable industry competition. If two or more firms choose to pursue the same generic strategy on the same basis, however, the result can be a protracted and unfavourable battle. The worst situation is where several firms are vying for overall cost leadership. The past and present choice of generic strategies by competitors, then, has an impact on the choices available to a firm and the cost of changing position [5, 18, 19].

The concept of generic strategies is based on the premise that there are a number of ways in which competitive advantage can be achieved, depending on industry structure. If all firms in an industry followed the principles of competitive strategy, each would pick different bases for competitive advantage. While not all would succeed, the generic strategies provide alternative routes to superior performance. Some strategic planning concepts have been narrowly based on only fail to explain the success of many firms, but they can also lead all firms in an industry to pursue the same type of competitive advantage in the same way – with predictably disastrous result.

- **Technology and Strategic Orientation**

The firms can rely on technology to create a cost advantage. Firms can also use technology to produce a differentiated product which is les subject to price competition. However, beyond the two generic strategies we have discussed, technology can also foster a third type: focus. Common to all three strategic orientations are several issue or concerns. One of the main questions: Should the firm be a “leader” or “follower”?

Some analysts maintain that the slow reaction of industry incumbents to the emergence of new technologies is a dangerous behaviour which often contributes to their decline; indeed, the existence of technological limits clearly indicates that the improvements to be expected from an existing technology are generally limited compared with that of a new technology. In such situations, a competitive advantage based on an older technology will rapidly decline when a newer, substitute technology is developed. However, the strategic shortsightedness of firm, including major corporations, with respect to these new technologies is often the cause of their demise.

The main advantage to being the technological leader-the firm which is first to implement a new technology-is the ability to shape both the technical and the commercial environments in which the new technology develops. The technological leader often sets the standards to which followers favourable corporate image for itself and, from the outset, occupies a dominant position on the experience curve that

characterize the new technology. When the leader also provides a product or service that valued by the customers, it has achieved initial differentiation, which allows it to implement a high margin policy.

While the principle of the "the attacker's advantage" has been proposed as a "rule" with regard to innovate, although a firm derives clear advantage from being "pioneer", this strategy also entails significant risk. The technological leader must assume the substantial technical risk involved in major technological innovation (the cost, delay, and uncertainty associated with technological development) as well as the market risk (serving customers whose reaction difficult to anticipate). Furthermore, technological leaders risk being caught on the wrong technological trajectory, committing specialized assets to products and processes that ultimately miss the mark. Table 3 shows summarised advantages of pioneers and followers.

Table 3. The Advantages of Pioneer s and Followers [27]

Advantages	
Pioneer	*Follower*
• Pioneering may offer a possibility to capture a major market share and impede subsequent launches of competitors: - Influencing the behaviour or preferences of customers; - Capturing a major market share.	• The dynamic of competition is known: - Tools and rules of competition; - Price and cost levels; - Marketing strategies; - Supply chains etc.
• Early experience and learning curve: - Rather free pricing situation, no competition; - Attainable cost benefits; - Licensing later.	• The dynamic of market is known: - Behaviour and reaction of customers; - Price sensitivity of customers; - Preferences and needs of customers etc.
• Image benefits.	• Possibility analyze the offerings and success of competitor and base own actions on this

As we see from Table 3, in contrast technological followers can sometimes take advantage of the market created by leaders without having to bear the cost of the development of the technology and of the launch of the innovation. By delaying entry, incumbents with industry-specialized supporting assets (e.g. manufacturing, distribution) can also take advantage of the early mistakes made by pioneers, entering later with both superior product and organizational resources [2, 3].

It is senseless to blindly advocate either a technological leader strategy or a technological follower strategy. Policies should be adopted in light of a number of factors – notably the firm's technological position, its market position, and the growth potential of the industry. Technological leadership and followship slogans considering generic technological strategies are shown in Table 4.

Table 4. Technological Leadership or Folowship [13]

	Technological Leadership	***Technological Followship***
Cost Leadership	Fist mover on lowest cost product or process technology	Lower cost of product or process through learning from leader's experience
Differentiation	First mover on unique product or process that enhances product performance or creates switching costs	Adapt product or delivery system more closely to market needs by learning from leaders.
Cost Focus	First mover on lowest cost segment technology	Alter leader's product or process to serve particular segment more efficiently
Differentiation Focus	First mover on unique product or process tuned to segment performance needs, or creates segment switching costs	Adapt leaders product needs for particular segment or create segment switching costs

In Table 4 shown the differentiation "attacker's advantage" slogan must provide company's continuous technological evolution, which enables it to move from mature technologies to those earlier in the life cycle when strategic considerations require it. To be a successful technological leader, a firm must make its own products obsolete before competitors do.

As we see from this thesi's theoretical part, the power of technology as a competitive variable lies in its ability to alter competition through changing industry structure. Viewing competition broadly, there are five fundamentals competitive forces at work in any industry whose collective strengths determines the ability of firm to earn rates of return on investment in excess of the opportunity cost of capital. Industry structure defines the arena and rules of the game in which competitive strategy seeks to best position the company. The main aim of competitive strategy is to create a defensible position for the firm against the competitive forces.

Lastly, while technological change can modify the relative importance of the various key factors for success in a given industry, thereby affecting the structure of competition in the industry, it is also a tool which companies can use to create competitive advantage. Competitive advantage can be achieved in very different ways: it can lower costs through scale of experience; technology can also contribute to the differentiation of the firm's products or services, becoming foundation of a differentiation strategy enabling the firm avoid direct price competition. According this chapter theoretical studies there are 4 generic technological strategies: cost leadership, differentiation, cost leadership focus and differentiation focus. We can't say which one of these strategies is right and which one is not. Company can't follow one of these competitive strategies blind. The specific actions required to implement each generic strategy vary widely from industry to industry.

1.3. THE GENERIC LIFE CYCLE

A tool which is useful as a guide to technology recourse allocation is that of the technology life cycle, inspired from the concept of product life cycle, used in marketing, and business life cycle, used in strategic planning models. Generic life cycle (Figure 4) plays very important role in overall company's business activities. It's crucial to understand generic life cycle implications in overall company's business activities and especially in technology management.

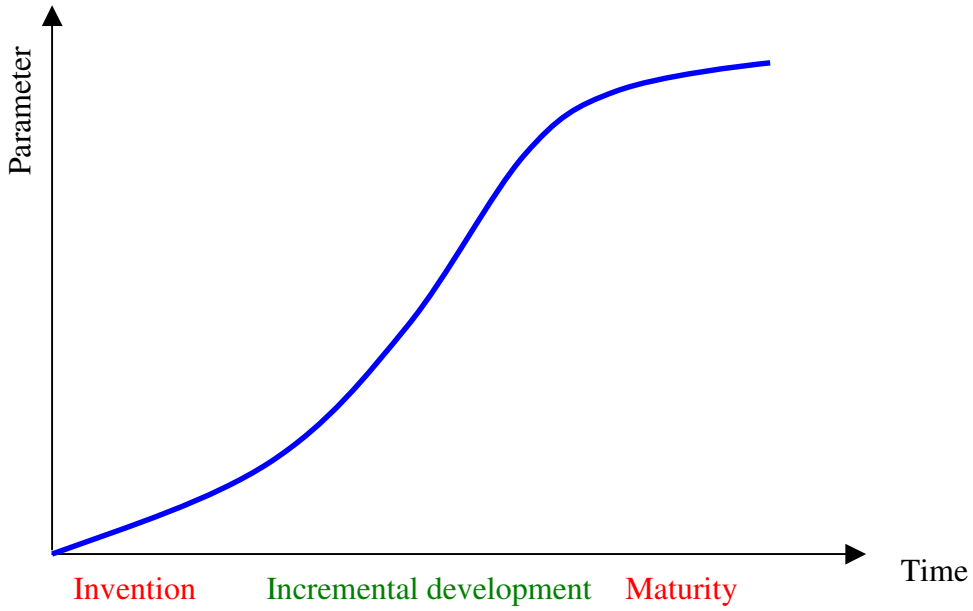


Figure 4. Generic Life Cycle [27]

In Figure 4 is illustrated generic life cycle. The vertical axis represents the performance level of the technology. In the first phase of the development of a technology, the firms must invest heavily for some time before it can actually see any result. This initial phase is marked by trial-and-error experimentation and is characterized by the limited effectiveness of the applications resulting from the technology compared with resources allocated for its development.

In the second phase, the firm has gathered a certain amount of information, knowledge and know-how about technology. Progress therefore accelerates rapidly and translates into an increase in the number and effectiveness of the applications; additional investments thus produce greater performance improvements.

In the third and last phase of the development of a technology, improvements resulting form technological investments become progressively smaller. In other words, to achieve a given level of performance improvement, the firm must make increasingly heavy investments. This slowing down is due to the fact that the physical or chemical limits of technology are being approached.

The firm's ability to classify its technologies according to the stages of the life cycle has important strategic implications: it enable the firm to determine whether it should continue to invest a particular technologies or shift to others. Indeed, when a technology approaches its natural limits, even the smallest performance improvement will require significant investment which would probably produce greater payoff if allocated to the development of other technologies lower on the technology life cycle. This observation is important because it implies that firm should not systematically allocate R&D budgets to teams or units working on the improvement of existing technologies; zero-base budgeting should be the rule in terms of R&D resource allocation, which should be determined on the basis of each technology's remaining potential for improvement. It is possible to determine, more or less, the limits of most technologies by soliciting the opinion of fundamental research specialists in the specific areas. Moreover, within he firm, a number of signals suggest when the development process of a technology research its natural limits. These signals are:

- a noticeable decline in the productivity of R&D departments;
- a trend toward missed deadlines on the part of such departments;
- a trend toward process rather than product improvement;
- the emergence of competitors which have chosen radically different technologies alternatives;
- little difference in terms of performance between competitors, despite significant variations in technology expenditure [2, 3].

As wee see from this chapter theoretical study, the development of technologies like the growth organism has different stages: introduction, growth, maturity and behave differently over time. In the first phase of the development of a technology, the company must invest heavily for some time before it can actually see any result. In the second phase, the company has gathered a certain amount of information, knowledge and know-how about technology. Progress therefore accelerates rapidly and translates into an increase in the number and effectiveness of the applications, additional investments thus produce greater performance improvements. In the third phase of the development of a technology, improvements resulting form technological investments become progressively smaller. In other words, to achieve a given level of performance improvement, the firm must make increasingly heavy investments.

Such dynamic requirements of technologies influence the marketing policies of firms and even product design strategies in different industries, which in turn influence the profit of the company. Thus, as we already understand from this chapter theoretical study, the technological change would be perfect managed by the company which change the technology in to new one, when technology reaches the maturity stage. In other words company must to shift from one technology to another one, when technology becoming obsolete. To sustain competitive advantage, enterprises must continuously upgrade technologies due to technological and economic progress.

1.4. MARKETING MIX

In order for your business to sell its products and services as successfully as possible, you need to look at what products you are selling in detail to ensure they will be attractive and needed; the price to ensure it is not too cheap or too expensive; where you are best distributing your product; and finally, how you can create interest and awareness for your products. All these elements need to be targeted at the right people at the right time.

Company planers must not only formulate the broad business strategies to help the company achieve its objectives but also must plan marketing strategies and tactics for specific products. We define marketing strategy as follow:

Marketing strategy comprises the broad principles by which marketing management expects to achieve its business and marketing objectives in a target market. It consists of basis decisions on marketing expenditures, marketing mix, and marketing allocation.

Marketing management must decide what level of marketing expenditures is necessary to achieve its marketing objectives. The company also has to decide how to divide the total marketing budget among the various tools. Marketing mix is one of the key concepts in marketing theory [8, 29].

Marketing managers are responsible for getting everyone in the firm to establish and maintaining mutually beneficial relationships with all shareholders. A mutual beneficial exchange is one in which both parties to the exchange believe they have received good value for their efforts. Traditionally, the main focus of marketing manager has been to please customers (Figure 5).



Figure 5. The Marketing Environment [1]

As we sees from Figure 5, given the total goal, managing the marketing process involves four factors: (1) designing want-satisfying products, (2) setting a price for the product, (3) distributing the product to a place where people will buy it, and (4) promoting the product. These four factors together are called marketing mix. As Figure 5 illustrates, marketing mix is surrounded by the marketing environment. Changes in the social, economic, technological, and global environments force marketers to constantly adapt. The environment of marketing is changing faster today than ever before, so marketers must make changes faster as well. Also we have to note, that customers are in the middle of the diagram because they are the focus [1, 22].

The marketing program consist numerous decisions on the mix of marketing tools to use. The marketing mix is the set of marketing tools the firm uses to pursue its marketing objectives n the target market. These tools are classified into broad groups that called the four Ps of marketing: product, price, place, and promotion (Figure 6).



Figure 6. The Four P Components of the Marketing Mix [7]

The particular marketing variables under each P are shown in Figure 6. Marketing-mix decisions must be made for influencing the trade channels as well as the final consumers. Figure 7 illustrates the company preparing an offering mix of products, services, and prices, and utilizing a promotion mix of sales promotion advertising, sales force, public relations, direct mail, telemarketing, and Internet to reach the trade channels and the target customers. The company can change its price, sales force size, and advertising expenditures in the short run. It can develop new products and modify its distribution channels only in the long run. Thus the firm typically makes fewer period-to-period marketing-mix changes in the short run that the number of marketing-mix decisions variables might suggest.

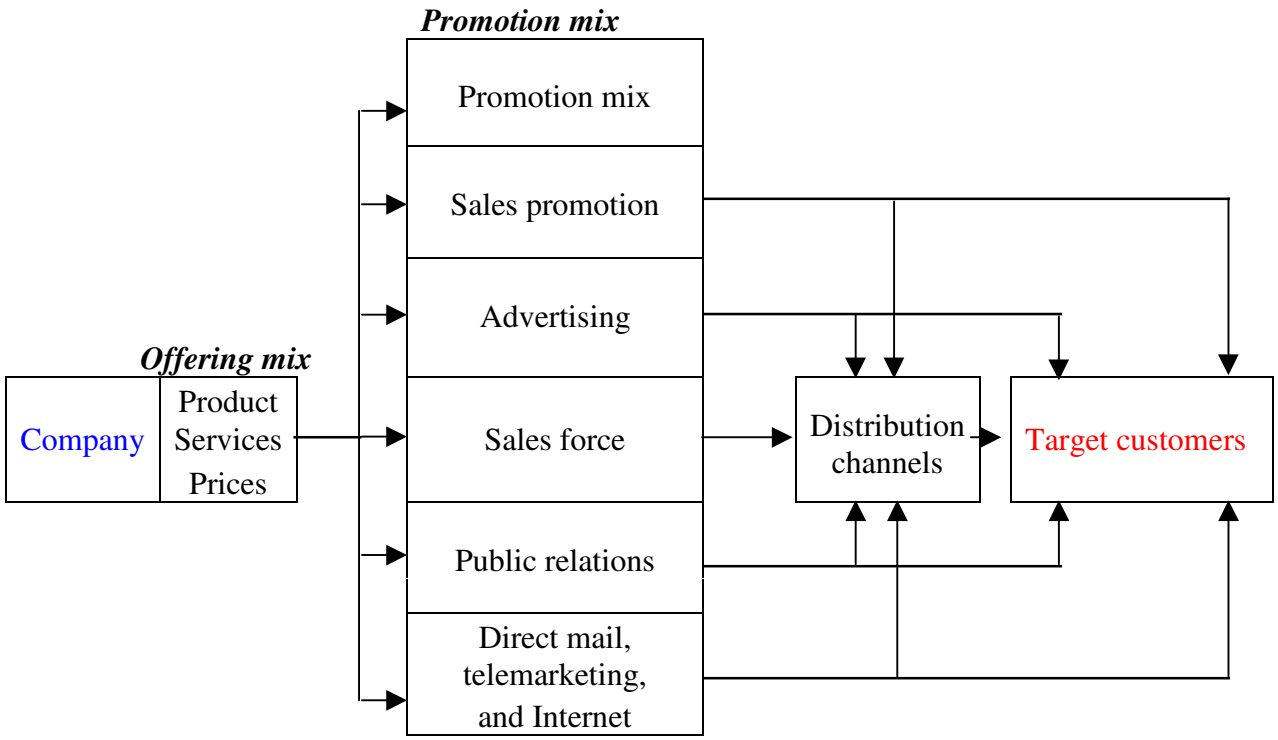


Figure 7. Marketing-Mix Strategy [8]

We have to note that the four Ps represent the sellers' view of the marketing tool available for influencing buyers. From a buyer's point of view, each marketing tool is designed to deliver a customer benefit. The sellers' four Ps correspond to the customers' four Cs.

Four Ps	***Four Cs***
Product	Customer solution
Price	Customer cost
Place	Convenience
Promotion	Communication

Winning companies will be those that can meet customer needs economically and conveniently and with effective communication [1, 7, 8, 10].

- **Product**

The product is the most important aspect of the marketing mix. You need firstly to identify who will be interested in buying your products and services, this should be identified once you have analysed the results of the market research. Your market research data will be able to look more closely at what your market want and then look at your products to see if they are satisfying your customer's needs. Examine your packaging design, materials used, size and quantity. By analysing the market and its requirements, you will be able to change the product or develop the product in order to match those

requirements of the people you are aiming at. You also need to remember that your customer's needs are likely to change and therefore your products should constantly change to reflect each market change, if you ignore these changes your products will no longer be needed or desired by your target customers. The only way you will be able to do this is to track your products and track how your customers are still receiving your products and services, balancing the subtle changes as they occur.

Products also go through what is known as a life cycle or phase. When exploring what mix is best suited to your product, you should consider where in the life-cycle your products lie. Depending which phase you felt your products were at - introductory, growth, maturity or decline, you would be able to make further decisions at to what price to charge, where to sell your product and what type of promotion would be most effective [26, 29].

- **Price**

Changing the product to reflect the product's life cycle is only part of the essence of a well balanced marketing mix, and so price enters the second important consideration of the marketing mix. When setting a price on a range for your products, you need to ensure that you can recoup any overheads, compete with rival companies and charge a price your customers are willing to pay. To do this you need to fine tune your pricing policy and you could achieve this in a number of ways:

- *Skimming pricing strategy* – strategy in which a new product is priced high to make optimum profit while there's little competition.
- *Penetration strategy* – strategy in which a new product is priced low to attract many customers and discourage competition.
- *Competition oriented pricing* is a strategy based on what all the other competitors are doing. The price can be at, above, or below competitor's prices.
- *Value pricing* is when marketers provide customers with brand-name goods at fair price [1, 29].

- **Place**

Place simply refers to how you will sell your products to your customers. Depending on what it is you are selling will directly influence how you distribute it, and it affects mainly those businesses that are in production. If for example you own a small retail outlet or offer a service to your local community then you are at the end of the distribution chain so and will be directly supplying a variety of products directly to the customer. However, if you are a producer, the method of distribution is extremely important as it could effect how their product is received and how it sells.

Direct Supply / Direct Sale. Direct selling involves selling directly to your customer; retailing, door-to-door, mail order and ecommerce all directly sell to customers. The advantage of deciding to directly sell would mean you are in direct contact will your customers and can easily detect the subtle changes which are occurring and adapt to the changes; i.e. demand for price changes or overall demand for your products. You also have complete control over your product range, how it is sold and at what

price. However, direct sales can come at a price; you will need storage facilities or retail premises to sell your products directly. Shopping carts on the internet required a degree of Internet knowledge to pull it off and building consumer confidence can prove a tricky business.

Direct to retailer. If you don't want the expense of opening and running your own retail outlet to sell to your customers, then you might consider selling to existing retail outlets. This would obviously save your company a lot of money setting up a variety of retails outlets to cover areas regionally or nationally. However, the administration behind running a system like this would be considerable. Firstly you would have to have sales teams to consult with the retailers on new products and promotion. You would also have to have a method of distributing too many small outlets region of the country you are selling to: this would cost a small business quite a lot of money and effort. The financial side also needs to be considered as you will have to administer a number of small accounts at the same time.

Wholesaler, merchant or agent supplier. You may, instead, decide to sell through a retailer or merchant supplier depending on the product you hope to sell. If you do decide to do this, you may loose some of your company identity. For example the supplier may request that your product be sold under the merchant or wholesaler brand name. You also loose contact with your consumer and so you will be unable to gauge or identify the subtle changes occurring in desire for you product as quickly as if you were directly supplying them. However, selling to wholesalers or merchant suppliers takes off an enormous amount of pressure of distribution, as this will be done for you. In addition, you can also reduce the level of storage space necessary to hold stock. Selling to larger organisation would mean more reliable income of capital and a more stable business for you [1, 11, 29].

You may decide to have a combination of all the distribution methods to maximise your level of distribution. Whatever, you decide you should consider the best method which you believe would work for you.

- **Promotion**

The fourth part of the marketing mix refers to process of informing your customers of your company's products. To make your customers aware that your products exist, there are a number of methods you may choose to use, they include:

- Media Advertising (television, magazines, Internet, radio).
- Personal selling (involving a sales person).
- Non-personal communication (persuasion advertising - competitions, free samples).
- Other promotional types include public relation exercises and free publicity [1, 11, 23].

Promotion needs to be carefully planned, and it is usual to decide on a new promotional plan each year. There should be one main objective to the promotion campaign and that particular emphasis should be projected during a certain time to a certain market segment. Using market research establishes who are a best market segments to aim your campaign towards. The message of your campaign must be focused

towards the market segment and it must relate to the promotional objectives. Time a promotion, when and where is the optimum impact likely to be. Which promotional technique you decide to employ must have a bearing on how best you can reach this segment and which technique would be best. Whatever you decide you must ensure that it will have the right impact on the customers you are aiming at.

When the product is created, it must to be sold. If company produce a good quality products, but can't sell it, the efforts worth nothing. As we already find in this chapter theoretical study, to reach the economic and marketing aims on final market, the companies uses marketing mix. Marketing mix consist from 4P: product, price, place, promotion. The product must be created considering customers' values and preferences. After that, the main tool is the price of the product, which must be adequate to the value of the product, or the customer will turn to the competitors. Another tool is place. Company must create such activities, which make the product widely easy reachable. The fourth tool is promotion. The company makes an effort so that the customer could get knowledge about the products and it tries to force the customer to buy them. The marketing mix must be carefully planed. Which techniques, methods or strategies company decide to employ, should consider the most effective and cheapest way which would work for a company.

1.5. MARKETING MIX STRATEGIES CONSIDERING PRODUCT LIFE CYCLE

Once a product has been developed, tested, and placed on the market with the help of the marketing mix, it often goes through a life cycle consisting of four stages: introduction, growth, maturity, and decline. This called product life cycle. The product life cycle is illustrated in Figure 8.

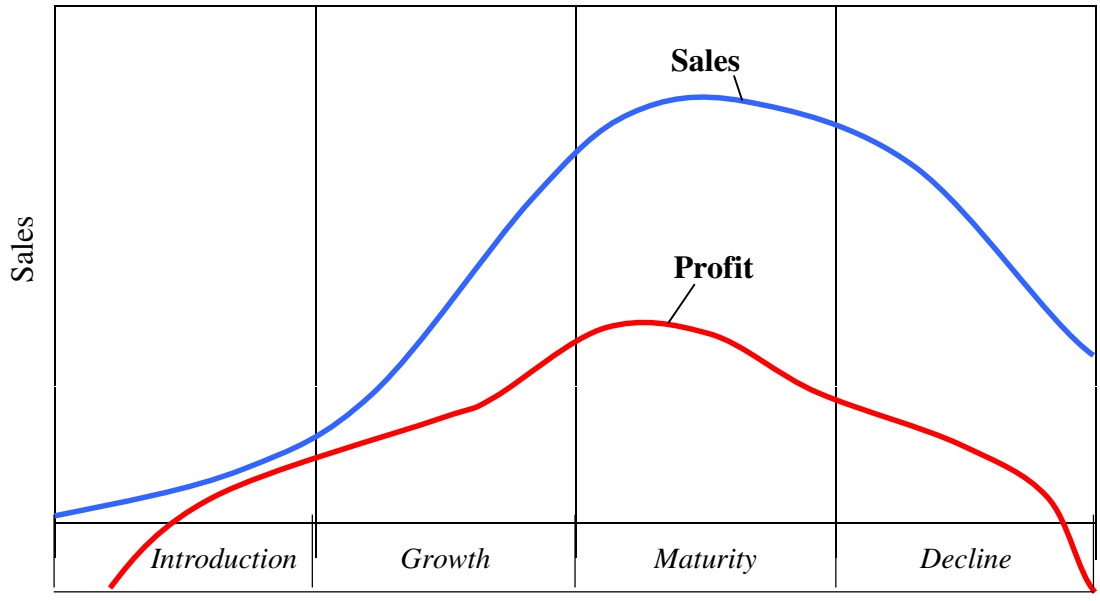


Figure 8. Sales and Profits during the Product Life Cycle [1]

The product life cycle is a theoretical model of what happens to sales and profits for a product class over time. The profit and sales variety we can see in Figure 8. However, not all products follow the life cycle, and particular brands may act differently. Nonetheless, the product life cycle may provide same basis for anticipating future market developments and for planning marketing strategies [1, 26].

- **The Importance of the Product Life Cycle**

The importance of the product life cycle to marketers is this: different stages in the product life cycle call for different strategies. Table 5 outlines the marketing mix decisions that might be made.

Table 5. Sample Strategies Followed During the Product Life Cycle [7]

Life Cycle Stages	***Marketing Mix Elements***			
	Product	*Price*	*Place*	*Promotion*
Introduction	Offer market-tested product; keep mix small	Go after innovators with high introduction price (skimming strategy) or use penetration strategy	Use wholesalers, selective distribution	Dealer promotion and heavy investment in primary demand advertising and sales promotion to get stores to carry the product and consumers to try it
Growth	Improve product; keep mix limited	Adjust price to meet competition	Increase distribution	Heavy competitive advertising
Maturity	Differentiate your product to satisfy different market segments	Further reduce price	Take over wholesaling function and intensify distribution	Emphasize brand name as well as product benefits and differences
Decline	Cut product mix; develop new-product ideas	Consider price increase	Consolidate distribution; drop some outlets	Reduce advertising to only loyal customers

As we go through the Table 5, we will see that each stages calls for multiple marketing mix changes. But these concepts are largely theoretical and should be used only as guideline. The Table 6 shows the sales, profit and competition variety over the product life cycle [1, 7].

Table 6. How Sales, Profit, and Competition vary over the Product Life Cycle [1]

Life Cycle Stages	*Sales*	*Profit*	*Competitors*
Introduction	Low sales	Losses may occur	Few
Growth	Rapidly rising sales	Very high profits	Growing number
Maturity	Peak sales	Declining profit	Stable number, then declining
Decline	Falling sales	Profit may fall to become losses	Declining number

Table 6 shows the theory of that happens to sales volume, competition, and profit/loss during the product life cycle. We can compare this table to the graph in Figure 8. For instance, both figures show that a product at the mature stage may reach the top in sales growth while profit is decreasing. At that stage, a manager may decide to create a new image for the product to start a new growth cycle. Knowing what stage in the life cycle a product is in helps marketing managers decide when such strategic changes is needed. Table 5 summarizes the decision making that may occur at each level of the life cycle.

- **Product Life Cycle Marketing Strategies**

Marketing Strategies: Introduction Stage. Because it takes time to roll out new product and fill dealer pipelines, sales growth tends to be slow at this stage. Are identified several causes for the slow growth: delays in the expansion of production capacity; technical problems; obtaining adequate distribution through retail outlets, and customer reluctance. Sales of expensive new products are retarded by additional factors such as product complexity and fewer buyers.

Profits are negative or low in the introduction stage. Promotional expenditures are at their highest ratio to sales because of the need (1) inform potential customer, (2) induce product trial, and (3) secure distribution in retail outlets. Firms focus on those buyers who are the readiest to buy, usually higher-income groups. Prices tend to be high because costs are high.

The Pioneer Advantage. Companies that plan to introduce a new product must decide when to enter the market. To be first can be highly reward, but risk and expensive. To come in later makes sense if the firm can bring superior technology, quality, or brand name.

Speeding up innovation time is essential in an age of shortening product life cycles. Those companies that first reach practical solutions will enjoy "first-mover" advantages in the market. Being early pays off. One study found those products that come out six months late but on budget earned an average of 33 percent less profit in their first five years; products that come out on time but 50 percent over budget cut their profits by only 4 percent.

Most studies indicate that the market pioneer gains the most advantage. Market pioneers generally enjoy a substantially higher market share than do early followers and late entrants.

What are the sources of the pioneer's advantage? Early users will recall the pioneer's brand name if the product satisfies them. The pioneer's brand also establishes the attributes the product class should possess. The pioneer's brand normally aims at the middle of the market and so captures more users. Customer inertia also plays a role; and there are producer advantages: economies of scale, technological leadership, patent, ownership of scarce assets, and other barrier to entry. An alert pioneer can maintain its leadership indefinitely by pursuing various strategies.

However, the pioneer advantage is not inventible. Some market pioneers were overtaken by later entrants. It is found several weaknesses among the failing pioneers, including new product that were too crude, where improperly positioned, or appeared before there was strong demand; product-development

costs that exhausted the innovator's resources, a lack of resources to compete against entering larger firms; and managerial incompetence or unhealthy complacency. Successful imitators thrived by offering lower prices, improving the product more continuously, or using brute market power to overtake the pioneer.

Golder and Tellis [8, 332p.] raise further doubts about the pioneer advantage. They distinguish between an inventor (first to develop patents in a new-product category), a product pioneer (first to develop a working model), and a market pioneer (first to sell in the new-product category). They also include nonsurviving pioneers in their sample. They conclude that although pioneers may still have an advantage, a larger number of market pioneers fail than has been reported and a larger number of early market leaders (though not pioneers) succeed. In more recent study, identify the following five factors as underpinning long-term market leadership: vision of a mass market, persistence, relentless innovation, financial commitment, and asset leverage. The pioneer should visualize the various product markets it could initially enter, knowing that it cannot enter all of them at once. Suppose market-segmentation analysis reveals the product market segments shown in Figure 9.

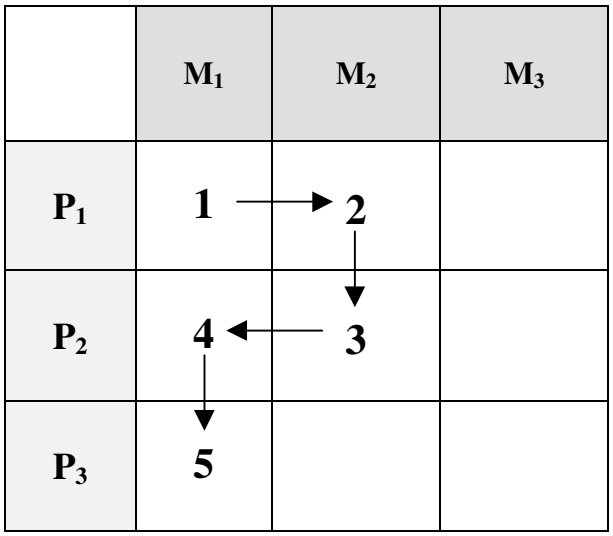


Figure 9. Long-Range Market Expansion Strategy [7]

The pioneer should analyse the profit potential of each product market singly and in combination and decide on a market expansion path. Thus the pioneer in Figure 9 plans first to enter product market P_1M_1, then move the product into a second market (P_1M_2), then surprise the competition by developing a second product for second market (P_2M_2), then take the second product back into the first market (P_2M_1), and then lunch a third product for the first market (P_3M_1). If this game plan works, the pioneer firm will own a good part of the first two segments and serve them with two or three products.

The Competitive Cycle. The pioneer knows that competition will eventually enter and cause prices and its market share to fall. When will this happen? What should the pioneer do at each stage? The stages of the competitive cycle are illustrated in Figure 10.

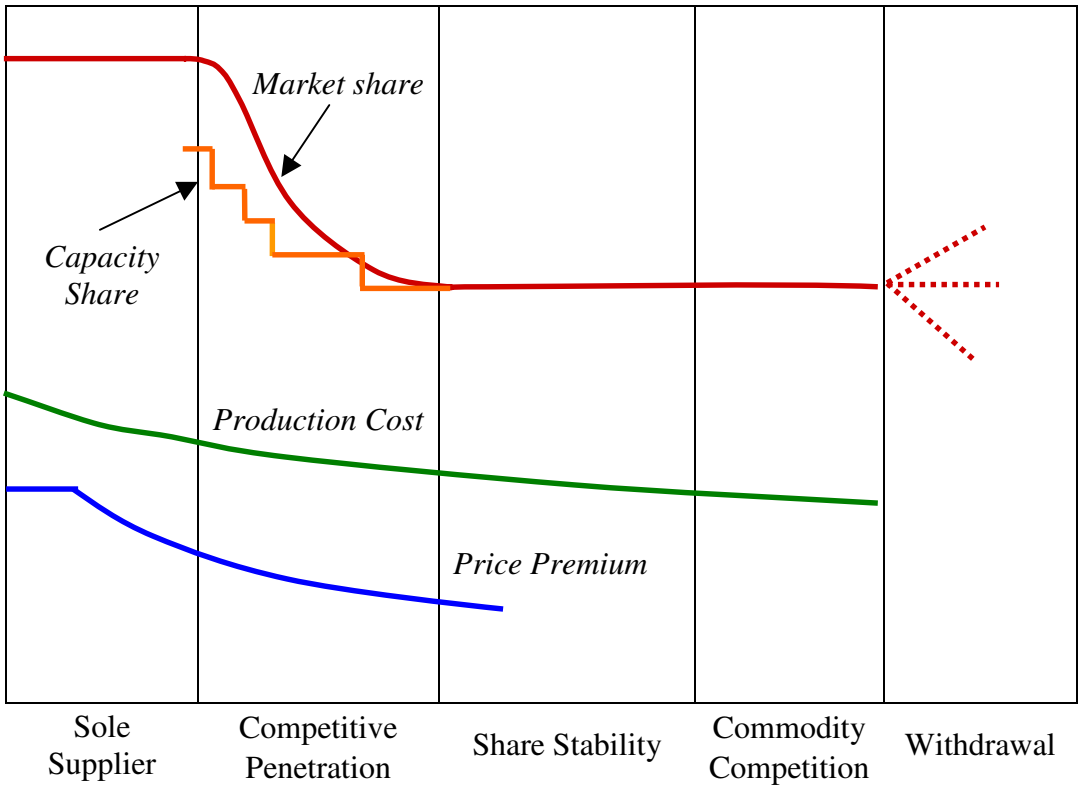


Figure 10. Stages of the Competitive Cycle [7]

Figure 10 shows five stages of competitive cycle that the pioneer has to anticipate:

1. Initially the pioneer is the sole supplier, with 100 percent of production capacity and sales.
2. Competitive penetration starts when a new competitor has build production capacity and begins commercial sales. The leader's share of production capacity and share of sales falls. As more competitors enter the market and charge a lower price, the perceived relative value of the leader's offer declines, forcing a reduction in the leader's price premium.
3. Capacity tends to be overbuilt during rapid growth. When a cyclical slowdown occurs, industry overcapacity drives down margins to lower levels. New competitors decide not to enter, and existing competitors try to solidify their positions. This leads t share stability.
4. Stability is followed by commodity competition. The product is viewed as a commodity, buyers no longer pay a price premium, and the supplier earn only an average rate of return
5. At this point, withdrawal begins. The pioneer might decide to build share further as other firms withdraw [7, 8].

Marketing Strategies: Growth Stage. The growth stage is marked by a rapid climb in sales. Early adopters like the product, and additional consumers start buying it. New competitors enter, attracted by the opportunities. They introduce new product features and expand distribution.

Prices remain where they are or fall slightly, depending on how fast demand increases. Companies maintain their promotional expenditures at the same or at a slightly increased level to meet competition and to continue to educate the market. Sales rise much faster than promotional expenditures, causing a welcome decline in the promotional-sales ratio. Profits increase during this stage as promotion costs are spread over a larger volume and unit manufacturing costs fall faster than price declines owing a decelerating rate of growth in order to prepare new strategies.

During this stage, the firm uses several strategies to sustain rapid market growth:

- It improves product quality and adds new product features and improved styling.
- It adds new models and flanker products (i.e., products of different sizes, flavours, and so forth that protect the main product).
- It enters new market segments.
- It increases its distribution coverage and enters new distribution channels.
- It shifts from product-awareness advertising to product-preference advertising.
- It lowers prices to attract the next layer of price-sensitive buyers [8, 24].

These market expansion strategies strengthen the firm's competitive position. A firm in the growth stage faces a trade-off between high market share and high current profit. By spending money on product improvement, promotion, and distribution, it can capture a dominant position. It forgoes maximum current profit in the hope of making even greater profits in the next stage.

Marketing Strategies: Maturity Stage. At some point, the rate of sales growth will slow, and the product will enter a stage of relative maturity. This stage normally lasts longer than the previous stages, and poses formidable challenges to marketing management. Most products are in the maturity stage of the life cycle, and most marketing managers cope with the problem of marketing the mature product.

The maturity stage divides into three phases: growth, stable, and decaying maturity. In the first phase the sales growth rate starts to decline. There are no new distribution channels to fill. In the second phase, sales flatten on a per capita basis because of market saturation. Most potential consumers have tried the product, and future sales are governed by population growth and replacement demand. In the third phase, decaying maturity, the absolute level of sales starts to decline, and customers begin switching to other products.

The sales slowdown creates overcapacity in the industry, which leads to intensified competition. Competitors scramble to find niches. They engage in frequent markdowns. They increase advertising and trade and consumer promotion. They increase R&D budgets to develop product improvements and line extensions. They make deals to supply private brands. A shakeout begins, and weaker competitors

withdraw. The industry eventually consists of well-entrenched competitors whose basic drive is to gain or maintain market share. Dominating in industry are a few giant firms – perhaps a quality leader, a service leader, and cost leader – that serve the whole market and make their profits mainly through high volume and lower costs. Surrounding these dominant firms is a multitude of market knickers, including market specialists, product specialist, and customizing firms. The issue facing in a mature market is whether to struggle to become one of the "big three" and achieve profits through low volume and high margin. Some companies abandon weaker products and concentrate on more profitable products and on new products. Yet they may be ignoring the high potential many mature markets and old products still have.

Market Modification. The company might try to expand the market for its mature brand by working with the two factors that make up sales volume:

$$\text{Volume} = \text{number of brand users} \times \text{usage rate per user.}$$

It can try to expand the number of brand users by (1) converting nonusers; (2) entering new market segments; (3) wining competitors' customers. Volume can also be increased by convincing current users to increase their brand usage: (1) use the product on more occasions; (2) use more of the product on each occasion; (3) use the product n new ways.

Product Modification. Managers also try to stimulate sales by modifying the product's characteristics through quality improvement, feature improvement, or style improvement.

Quality improvement aims at increasing the product's functional performance. A manufacturer can often overtake its competition by launching a "new and improved" product. This strategy is effective to the extent that the quality is improved, buyers accept the claim of improved quality, and a sufficient number of buyers will pay for higher quality. However, customers are not always willing to accept an "improved" product.

Feature improvement aims at adding new features (for example, size, weight, materials, additives, accessories) that expand the product's versatility, safety, or convenience. This strategy has several advantages. New features build the company's image as an innovator and win the loyalty of market segments that value these features. They provide an opportunity for free publicity and they generate sales force and distributor enthusiasm. The chief disadvantage is that feature improvements are easily imitated unless there is a permanent gain from being first, the feature improvement might not pay off in the long run. A strategy of style improvement aims at increasing the product's aesthetic appeal. A style strategy might give the product a unique market identity. Yet style competition has problems. First, it is difficult to predict whether people – and which people – will like a new style. Second, a style change usually requires discontinuing the old style, and the company risks losing customers. Customers may become attached to something as seemingly insignificant as peanut shell.

Marketing-Mix Modification. Product managers might also try to stimulate sales by modifying other marketing-mix elements. They should ask the following questions:

- Prices: Would a price cut attracting new buyers? If so, should the list price be lowered, or should prices be lowered through price specials, volume or early-purchase discounts, freight cost absorption, or easier credit terms? Or would it be better to raise the price to signal higher quality?
- Distribution: Can the company obtain more product support and display in existing outlets? Can more outlets be penetrated? Can the company introduce product into new distribution channels?
- Advertising: Should advertising expenditures be increased? Should the message or copy be changed? Should the media mix be changed should the timing, frequency, or size of ads be changed?
- Sales promotion: Should the company step up sales promotion – trade deals, cents-off coupons, rebates, warranties, gifts, and contents?
- Personal sales: Should the number or quality of salespeople be increased? Should the basis for sales force specialization be changed? Should sales territories be revised? Can sales-call planning be improved?
- Services: Can the company speed up delivery? Can it extend more technical assistance to customer? Can it extend more credit?

Marketers often debate which tools are most effective in the mature stage. For example, would the company gain more by increasing its advertising or its sales-promotion budget? Sales promotion has more impact at this stage because consumers have reached an equilibrium in their buying habits and preferences, and psychological persuasion (advertising) is not as effective as financial persuasion (sales-promotion deals). Many customers-packaged-goods companies now spend over 60 percent of their total promotion budget on sales promotion to support mature products. Other marketers argue that brands should be managed as capital assets and supported by advertising. Advertising expenditures should be treated as a capital investment. Brand managers, however, use sales promotion because its effects are quicker ad more visible to their superiors; but excessive sales-promotion activity can hurt brand's image and long profit performance [8, 24, 25].

Marketing Strategies: Decline Stage. Sales decline for a number of reasons, including technological advances, shift in consumer taste, and increased domestic and foreign competition. All leads to overcapacity, increased price cutting, and profit erosion. The decline might be slow. Sales may plunge to zero, or they may petrify at a low level. As sales and profit decline, some firms withdraw from the market. Those remaining may reduce the number of product they offer. They may withdraw from smaller market segments and weaker trade channels, and they may cut their promotion budgets and reduce prices further. Logic may also play a role. Management believes that product sales will improve

when the economy improves, or when the marketing strategy is revised, or when the product is improved; or the weak product may be retained because of its alleged contribution to the sales of the company's other products; or its revenue may cover out-of-pocket costs, even if it is not turning a profit.

Unless strong reasons for retention exist, carrying a weak product is very costly to the firm – and not just by the amount of uncovered overhead and profit: There are many hidden costs. Weak products often consume a disproportionate amount of management's time; require frequent price and inventory adjustments; generally involve short production runs in spite of expensive setup times; require both advertising and sales force attention that might be better used to make the healthy products more profitable; and can cast a shadow on the company's image. The biggest cost might well lie in the future. Falling to eliminate weak products delays the aggressive search for replacement products. The weak products crate a lopsided product mix, long on yesterday's breadwinner and short on tomorrow's

In handing aging products, a company faces a number of tasks and decisions. The first task is to establish a system for identifying weak products. Many companies appoint a product-review committee with representatives from marketing, R&D, manufacturing, and finance. The controller's office supplies data for each product showing trends in market size, market share, prices, costs, and profits. A computer program then analyzes this information. The managers responsible for dubious products fill out rating forms showing where they think sales and profits will go, with and without any changes and marketing strategy. The product-review committee makes a recommendation for each product – leave it alone, modify its marketing strategy, or drop it.

Some firms will abandon declining markets earlier than others. Much depends on the presence and height of exit barriers in the industry. The lower the exit barriers, the easier it is for firms to leave the industry, and the more tempting it is for the remaining firms to stay and attract the withdrawing firms' customers. The appropriate strategy depends on the industry's relative attractiveness and the company's competitive strength should consider shrinking selectively. A company that is in an attractive industry and has competitive strength should consider strengthening its investment.

In a study of company strategies in declining industries, identified five decline strategies available:

1. Increasing the firm's investment (to dominate the market or strengthen its competitive position).
2. Maintaining the firm's investment level until the uncertainties about the industry are resolved.
3. Decreasing the firm's investment level selectively, by dropping unprofitable customers groups, while simultaneously strengthening the firm's investment in lucrative niches.
4. Harvesting ("milking") the firm's investment to recover cash quickly.
5. Divesting the business quickly by disposing of its assets as advantageously as possible.

If the company were choosing between harvesting and divesting, its strategies would be quite different. Harvesting calls for gradually reducing a product or business's costs while trying to maintain its sales. The first step is to cut R&D costs and plant and equipment investment. The company might also

reduce product quality, sales force size, marginal services, and advertising expenditures. It would try to cut these costs without letting customers, competitors, and employees know what is happening. Harvesting is an ethnically ambivalent strategy, and it is also difficult to execute. Yet many mature products warrant this strategy. Harvesting can substantially increase the company's current cash flow.

When a company decides to drop a product, it faces further decisions. If the product has strong distribution and residual goodwill, the company can probably sell it to another firm. It the company can't find any buyers, it must decide whether to liquidate the brand quickly or slowly. It must also decide on how much inventory and service to maintain for past customers. Summarised product life cycle characteristic and objectives are shown in Table 7 [8, 26].

Table 7. Summary of Product Life Cycle Characteristics, and Objectives [26]

PLC stages / *Characteristics*	*Introduction*	*Growth*	*Maturity*	*Decline*
Sales	Low sales	Rapidly rising sales	Peak sales	Declining sales
Costs	High cost per customer	Average cost per customer	Low sales per customer	Low sales per customer
Profits	Losses may occur	Very high profits	Declining profits	Profits may fall to become losses
Customers	Innovators	Early adopters	Middle majority	Laggards
Competitors	Few	Growing number	Stable number beginning to decline	Declining number
Marketing Objectives	Create product awareness	Maximize market share	Maximize profit while defending market share	Reduce expenditure and milk the brand

As we understand in this chapter theoretical study, the product life cycle describes the processes that products undergo: from the initial research, through market promotion and, ultimately, the exit of the product from the market. Products behave differently at different stages of the life cycle, and the recognition and demands of products also vary over time. Such dynamic environments of products influence the marketing policies of company and even product design strategies in different industries, which in turn influence the profit of the firm. To understand PLC role in marketing is crucial. Understanding in which stage of life cycle company's product is, can help for managers to make good decisions on marketing mix strategies. The company must continuously upgrade marketing mix strategies due to product life cycle stages. The bad decisions on marketing mix for a company can cost a lot of wasted time and money.

As we from this master degree all theoretical part study, success in today's challenging economy – marked by constant technological innovations, global competition and tight markets - means more than planning for success. A technological development and innovations often modifies the basis of competition in a given industry and technology is, in many cases, one of the main sources of competitive advantage. Staying competitive today means creating, driving and sustaining competitive advantage. And it's not enough just to have good results today and think that you will drive company's business successful tomorrow. The development of technologies and products, like the growth of organisms, has different stages and enterprises must continuously upgrade technologies and products due to technological and economic progress.

As we understand form theoretical study, technology management in a company (development, technical activities and production) is completely connected with marketing management. Engineering cannot be taken only as a technical activity, but as a set of human and technological activities securing the efficiency of technical solution and profitability in the given business. Marketing management like technology management influences total efficiency and profitability of company. On the basis of marketing can be decided what products and services can be insured, which goods are useful to produce and which is useful to stop. To reach the economic and marketing aims on final market, the management of the company uses marketing mix.

The marketing environment affects the solutions of the technology management and technological environment effect marketing management decisions. To utilize technological strategy effectively, product marketing mix must be created, considering advantages provided from pursued technological strategy. In other way company can't gain the maximum benefit form pursued technological strategy, what's doing the job without the essence. But the trouble is that most companies' lack much in the way of an effective technological strategy and marketing program, and worse yet, seem at all doesn't care about it effective utilization. A business without an understanding relationships between technological strategy and marketing management will inevitably lead to a number of project decisions made independently of one another, there is no focus and no expectable results.

2. TECHNOLOGY MANAGEMENT AND PRODUCT MARKETING MIX IN COMPANY "METOS"

2.1. COMPANY'S "METOS" INTRODUCTION

Company "Metos" today. Company "Metos" with 80 years' experience operating around the world – on land and at the sea. "Metos" designs, manufactures and markets products and total customer based solutions for efficient food and beverage production in professional kitchens. Company offer a complete range of products and services from single units up to turnkey kitchens. Company is not only a supplier of equipment and projects, but also one of the largest equipment manufacturers in its field. "Metos" assume responsibility for the whole delivery chain from the factory to the kitchen floor.

Company's know-how within the food service profession has profound and affirmative tradition. In Finland the skills have been gathered since 1922, when the ancestor-company "Metalliteos" was established. "Metos" of today was born when "Hackman Suurkeittiot" in September 1994 bought its bigger competitor "Metos". "Metos" operated with the name "Hackman Metos" and belonged to "HackmanGroup" until the beginning of 2004. "Hackman Group" had developed from the trading company founded in 1790 in Vyborg city. "Hackman public company" was sold to the Italian "ALI Group" in the beginning of 2004. "ALI Group" has announced that the goal is to develop "Metos" as an independent group of companies. Figure 11 shows company "Metos" history in short.

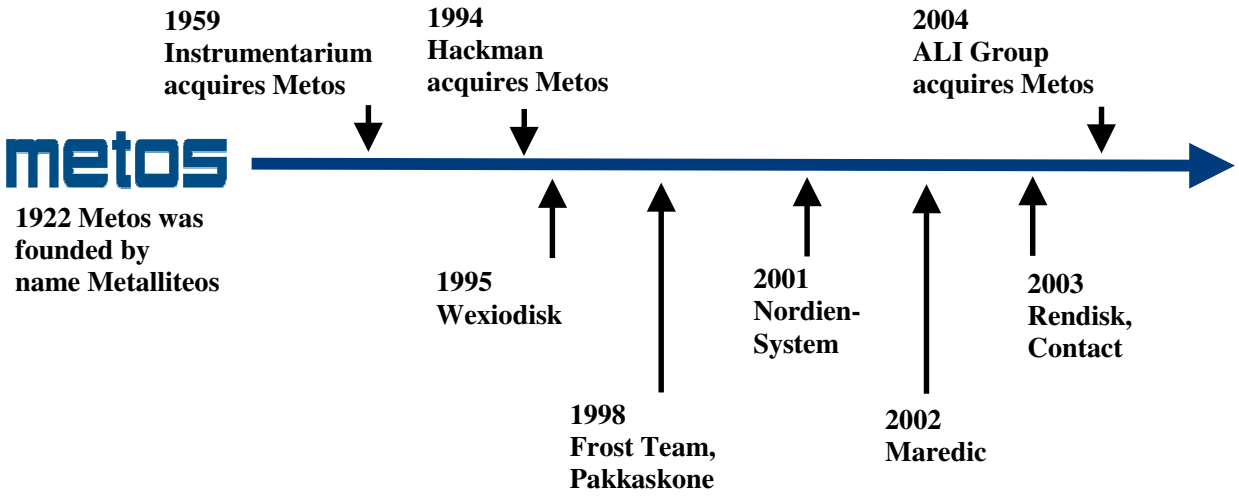


Figure 11. "Metos" History in short

Together "ALI Group" and "Metos" have become the market leader in Europe and the third biggest company globally in its field. The combined turnover is 700 million Euro and the personnel exceeds 4.000 people. Figure 12 illustrates company "Metos" production & sales units today.

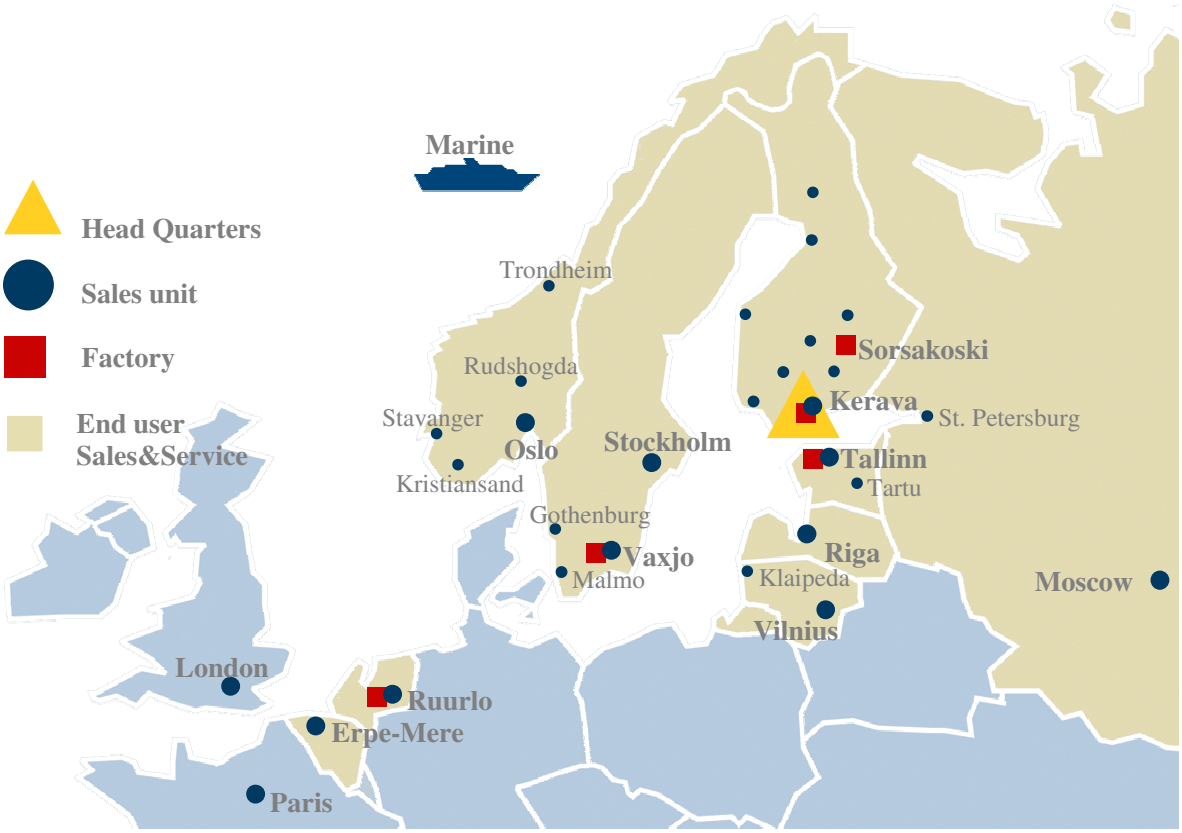


Figure 12. “Metos” Production and Sales Units

As we see from Figure 12, the sales is cared for by own sales offices in Finland, Sweden, Norway, France, the Netherlands, Belgium, Great Britain, Russia, Estonia, Latvia and Lithuania, and elsewhere by a broad network of dealers. Production facilities are situated in Finland, Sweden, Estonia, the Netherlands and Belgium. The Head Quarters is located in Finland.

Kitchen intelligence crystallizes company’s mission of raising the performance of professional kitchens. It is based upon ambition to contribute to customers’ success through a deep understanding of their operations. Company strive to be a forerunner of business that provides professional kitchens with the means to improve their results. Company development is based upon a deep understanding of customers and their business operations and environments. This, combined with more than 80 years of profound technological experience, has developed company’s perception of a kitchen as a whole where state of the art systems and professional equipment add value beyond single products. Therefore company have supplemented wide product assortment with a spectra of services such as planning, training and maintenance services. In this way company can deliver to customers complete systems that are reliable and efficient throughout their life cycle.

“Metos” is granted ISO 9001:2000 quality certificate and ISO 1401 environment certificate. Certificates are valid development, production and marketing of customer-oriented complete solutions, products and services to assist professional kitchens in the production of food and beverages.

Company "Metos" mission and values. Company "Metos" employees believe in customer orientation and knowledge. Company's mission to raise the performance of professional kitchens is based upon ambition to contribute to customer's success through a deep understanding of their operations. The approach to raising the performance of professional kitchens is unique. Company perceive a kitchen process as a whole where state-of-the-art systems and professional equipment add value beyond single products. The services which provided ensure the right solution for each customer and efficiency and reliability during the kitchen's whole lifecycle. The foundation for offering is knowledge: knowledge about customers and their kitchen environments and processes as well as technologies. Because knowledge is not static, it is ongoing interest to understand more. This approach enables kitchen staff to achieve more with less resources and kitchen owners to secure a solid return on their investments. It also makes kitchen consultants' work with "Metos" more efficient.

Customers' opinions are an essential part of product and service design, company eagerly let them express their views concerning the future of the food service industry and company's ability to create added value. Customer testimonials are therefore an essential part of marketing communication. It is the key concept in the development and strengthening of the "Metos" brand image.

The main company's values:

- Knowledge. Company actively train personnel to improve their understanding of the end-user operations and business / operational environment as well as of professional kitchen processes and product technologies. Actively develop new solutions, which improve the competitiveness of customers. The "Metos" actively develop and company's own processes to be able to offer solutions more cost-effectively and profitably.
- Customer dedication. Company develop products in co-operation with customers. Study customers' requirements and needs thoroughly to ensure the correct basic information, actively collect customer feedback and utilise it in operations.
- Continuity. Company offer customers efficient and reliable concepts during the kitchen's whole lifecycle. "Metos" offer to customers solutions, which are gross-economically beneficial during their whole lifecycle. Company create and maintain long-standing customer relationships and continuously improve "Metos" image as the preferred partner.

Core value Knowledge:

- About customers and their business- and food service processes;
- About kitchen environments & processes;
- Technologies;
- About customers business costs;
- About customers business profit.

"Metos" company task is to find solutions which help to raise performance of professional kitchen. "Metos" solutions:

- Increase the sales of the professional kitchen;
- Increase quality and image of the professional kitchen;
- Increase the efficiency of processes in the professional kitchen;
- Decrease the costs and increase a profit of the professional kitchen.

Company "Metos" and environment. Company is committed to environmentally sensitive thinking. In the planning, production and delivery of professional kitchens continuously develop new, more environmentally friendly solutions. In order to achieve improvements company work closely with customers, suppliers and service companies. First of the improvements objectives is to reduce the energy and water consumption of professional kitchens, in addition to improving the efficiency of food preparation. The second objective is to minimize the amount of waste produced in the production and delivery of the products by sorting and recycling. All remaining waste, mostly of stainless steel, is recycled. The environmental impact of discarded products is reduced when the right materials are used in the structures. For instance, "Metos" dishwashers are manufactured from 90 % recyclable materials. "Metos" has created in Finland a nationwide reception and recycling system for discarded equipment.

Company "Metos services for customers. At "Metos" employees are fully committed to "Metos" equipment after installation and commissioning, whether at home or abroad. Mobile service system covers the most common spare parts assuring service to customers within 24 h. Additionally, company make service contracts and kitchen analysis for minimizing total after-sales costs and assuring a continuously smooth kitchen operation.

Company "Metos" not only sells its good quality products. For company is very important to ensure company's customers business successful operation for a long time. For international partners and subsidiaries, company has language-skilled, dedicated personnel to provide spare parts and technical support. For new partners on new products provide individual installation and service training at factory in Finland or at the premises of partners. To ensure good product performance and successful customers business "Metos" for its customers offer:

- Continuous Training. Along with new equipment and product development provide service personnel continuous product training. This way company can make sure that customers receive accurate and up-to-date after-sales service.
- Prompt Deliveries. "Metos" store more than 15,000 spare parts articles. Through the automated storing system can make accurate and quick deliveries all over the globe.
- Parts for 10 years. Company guarantees spare parts for "Metos" equipment for a minimum of ten years.

"Metos" manufacture and serve for a market good quality and unique products. To add value for customer company offer some services, which thanks to skilled company's personnel helps to ensure successful customer business for a long time. In Figure 13 are shown "Metos" offered services.

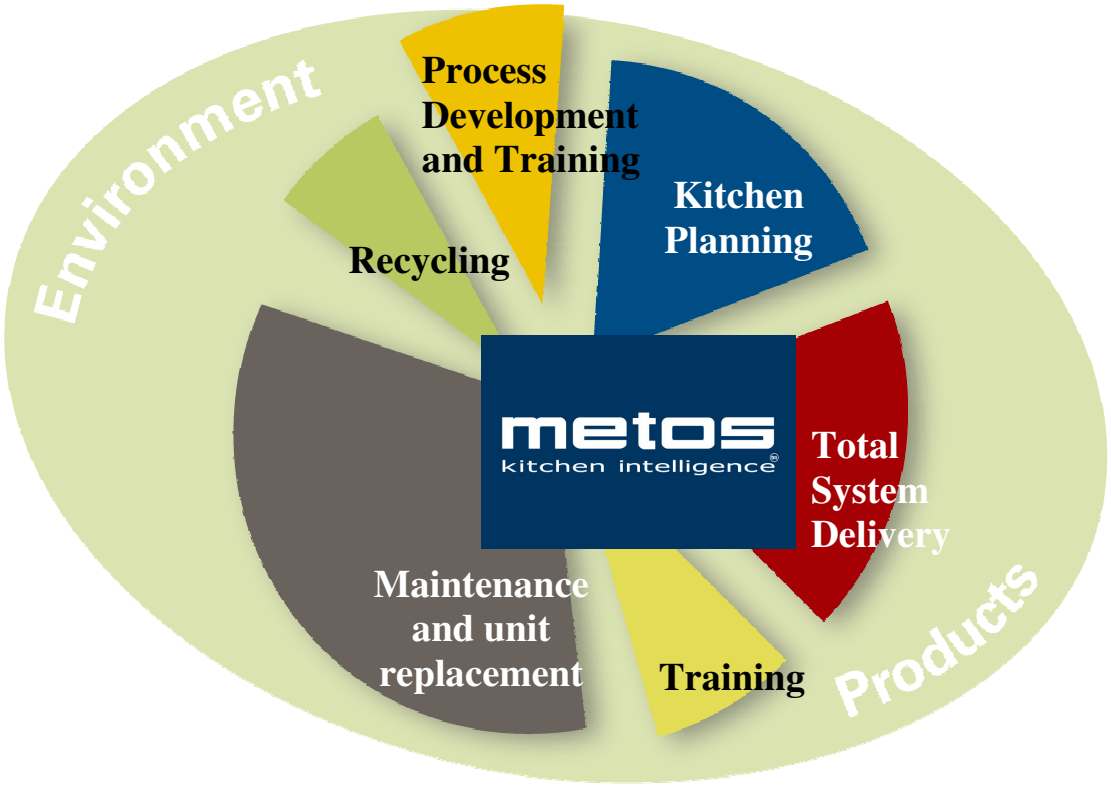


Figure 13. "Metos" Services

As we see from Figure 13, "Metos" offers to potential customers' kitchen planning, installation, training, maintenance and process development services.

Kitchen Planning. Company "Metos" kitchen planning department plans and designs solutions for all kinds of food service facilities from large central production units to small restaurants. "Metos" kitchen planners possess the latest know-how in food service technology and offer the most functional and productive solutions regarding both kitchen machines and working processes. Company "Metos" employees try to save both time and money for its customers.

"Metos" symbol library is a good help for designers who designs kitchen using AutoCAD. The library consists of equipment and furniture from company product catalogue. The symbols are equipped with technical data as attributes. Connection points are also shown in the symbols. A partial menu for easy use inside AutoCAD is also available. "Metos" kitchen planners produce quickly and efficiently complete CAD-drawings on individual products as well as kitchen projects, including information on dimensions, water-, drainage- and electrical connections. On special request can also provide 3D-drawings to illustrate specific solutions.

Installation. On the domestic markets with local "Metos" presence, company supervises complete projects in collaboration with the various construction parties involved. Starting from dimensioning the food service facilities take care of the delivery and installation of the complete kitchen. On international markets "Metos" works with the best local partners, providing their customers with required services.

Training. When a product or kitchen project is installed and ready for commissioning domestic chef will be present to give individual product training to the end-user. Only correct and optimized use of the equipment will assure the highest productivity and flexibility of the kitchen. At the "Metos" Centre corporate chefs organize product presentations, cooking demonstrations and educational training for individuals and groups of people throughout the year. Export orientated chefs provide demonstrations at international trade shows as well as product education to chefs at distributors and their customers.

Company "Metos" offer to a customers good quality products, actively develop new solutions, which improve the competitiveness of company's customers. "Metos" develop products in co-operation with customers, study customers' requirements, actively train personnel to improve their understanding of the end-user operations and business/operational environment as well as of professional kitchen processes and product technologies. To add value for customer company offer some services, which thanks to skilled company's personnel helps to ensure successful customer business for a long time. The "Metos" also actively develop and its own processes to be able to offer for customers solutions more cost-effectively and profitably.

2.2. COMPANY'S "METOS" BRAND AND TECHNOLOGICAL STRATEGIES ANALYSIS

Before starting to analyse technological strategy in company "Metos" at first we will analyse briefly company's brand strategy. All business units strategies in company must be related flexible and very clear understandable between working personnel links. Usually one business unit strategy affects other business unit strategy. What is why important to understand brand strategy, which was maintained 80 years before starting to analyse technological company "Metos" strategy.

- **Company's Brand Strategy**

The main brand in "Metos" group is "Metos" used always in end-user sales and services segment and mainly also in international products segment. The strategic brand is "Metos". The ambition is to be the leader in the areas where "Metos" operates: geographically in all the countries where "Metos" is present with end-user sales and service concept and product-wise in the internationally products. The aim is to be the most customer oriented company offering complete value adding solutions and services to support customer's business and processes. Figure 14 illustrates "Metos" brand in business sectors.



Figure 14. "Metos" Brand in Business Sectors

As we see from Figure 14, both business areas "Metos" end-user sales and service as well as "Metos" international products focuses upon building "Metos" brand. Company trays identify it self as most customers oriented company offering innovative products, complete value adding solutions and services to support the customer's business and processes. The Figure 15 shows company's distribution channels and trade marks in different areas.

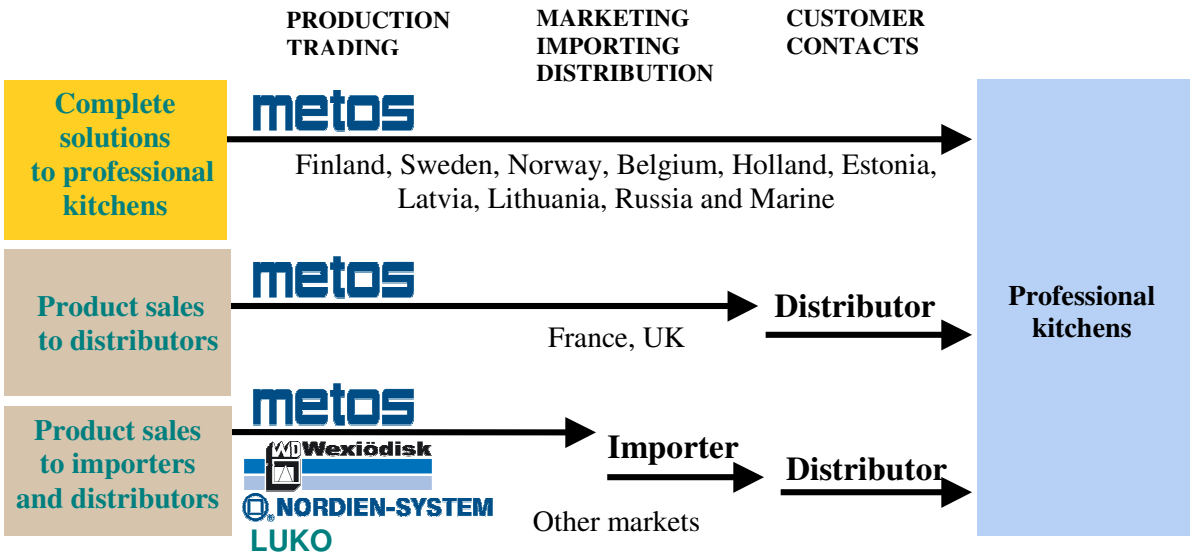


Figure 15. "Metos" in Different Areas

From Figure 15 we see that for larger market coverage "Metos" international products can use also other brands such as "Wexiodisk", "Nordien-System" and "LUKO".

- **“Metos” technological strategy analysis**

Company’s strategic intent is to be No. 1 in the areas were company operates. To be the most customers’ oriented company offering innovative products, complete value adding solutions and services to support the customer’s business and processes. By building the “Metos” brand, company try to reach common goal of ensuring position as the number one professional kitchen brand in the areas where operate, company must look unified to customers and interest groups in whatever form company are presented. Consider to that company’s technological strategy and technology management plays crucial role in overall business activity.

To achieve the goal to be No. 1 brand “Metos” focusing resources and capabilities in the area of R&D. “Metos” concentrate efforts in product improvement, development and continuously steering various reform initiatives to secure competitiveness. Technological management strategy aimed at building and sustaining prominence in the market. The company seeks to strengthen competitiveness, create profitability and grow with efforts to differentiate its products with attributes - unique and good quality. ”Metos” is exerting its best efforts to respond positively to the fast-changing business environment and to shore up its competitiveness in its businesses, takes the initiative in leading the development of professional kitchen equipment industry. The success we can see because of product innovations and its fearlessness in accepting many challenges. “Metos” brand building effectively used to support product differentiation.

Company “Metos” with pursued differentiation strategy focus on increasing customer satisfaction and the amount customers are willing to pay for “Metos” product and services. With differentiation technological strategy company try to add quality and features that valued by customers. Advantages from pursued technological differentiation strategy for “Metos” are:

1. Differentiation from positioning towards competition provides the value which is based on features that have real value for the customer. This in turn gives leverage to premium pricing policies as the perceived power in the industrial chain increase through pull-demand from the end-user side.
2. Increasing customer loyalty decreases pressure on price, acting as a buffer against competitive actions.
3. New products can be introduced under the umbrella of well-established company actions.
4. A previous mainly transaction-oriented, buyer-seller relationship becomes more institutionalized due to more complicated product offering. Increased co-operation in the form of marketing support and technical co-operation vis-à-vis the end-user is required. The focus of industrial marketer shifts from reactive selling to customer relationship management.

”Metos” also try to ensure that outstanding R&D results will be recognized by responding strong compensation in order to motivate its researchers to do their best in their respective projects. Company

gives full support in recruiting and training the best research resources. R&D department covers all its business activity. The organization is concentrating on research on basic technology, research on quality inspection and standards fulfillment to improve its product quality along with research on production related basic technologies and design. “Metos” also has separate R&D centers that carry out projects focusing on specific areas to develop product related application technology and many others. The essence of “Metos” innovation is its research and development activities. “Metos” try to fulfill role as a guide in kitchen equipment world by fostering a R&D culture and technology management. R&D strategy is for the reason to introduce improved and new products that will give value for customers, and customers will bring profit for “Metos” company.

“Metos” competitive business environment are changing very fast. Right decision today can be absolute tomorrow. To sustain competitiveness, company must to maintain and try to improve business every day. Technology strategy plays crucial rule in enterprise business because company achieved competitive edge are thanks of good quality product and services. That’s why “Metos” always pays a lot of attention to technologic strategy and technological management, especially on the following areas:

- Company develops No. 1 products and reinforcing core technological capability. “Metos” try to select and concentrate on winning key products, plan continuously to lead the market by focusing on premium products such as washing machines, self cooking centers.
- “Metos” exert every effort to continue to ensure product leadership which helps to capture market share. Based on such core technological capability, company step up R&D efforts in developing new products. Product life cycle concept plays very important role in company’s technological strategy.
- ”Metos” keep working hard to expand market position by producing innovative market leading products as well as improving product quality and cost competitiveness.
- To response to the competition company try to reinforce the R&D system focusing on international business support in strategic areas. Moreover, company concentrate on strengthening R&D including more expanding investment in international networks.
- Company respond to the changing business environment by actively optimizing manufacturing, marketing to each product area.

Technological strategy in enterprise must always fit with general business strategy. Technological strategy can be worth nothing if technological planning not considers to all business activity, industry structure, competition, market needs and etc. All business units, departments must be related with each other very flexible links. It must be like one organism.

Further we will analyse the main points for successful business related with technology management which must be taken in to account in company “Metos”:

1. Understanding the market. Product differentiation - provide competitive advantage for company because it is based on the coordinated use of various knowledge, skills and technological capabilities within the company. Product differentiation in company starts with an understanding of customers' earning logic and future needs. Figure 16 illustrate customers' needs and company "Metos" behaviour relationships.

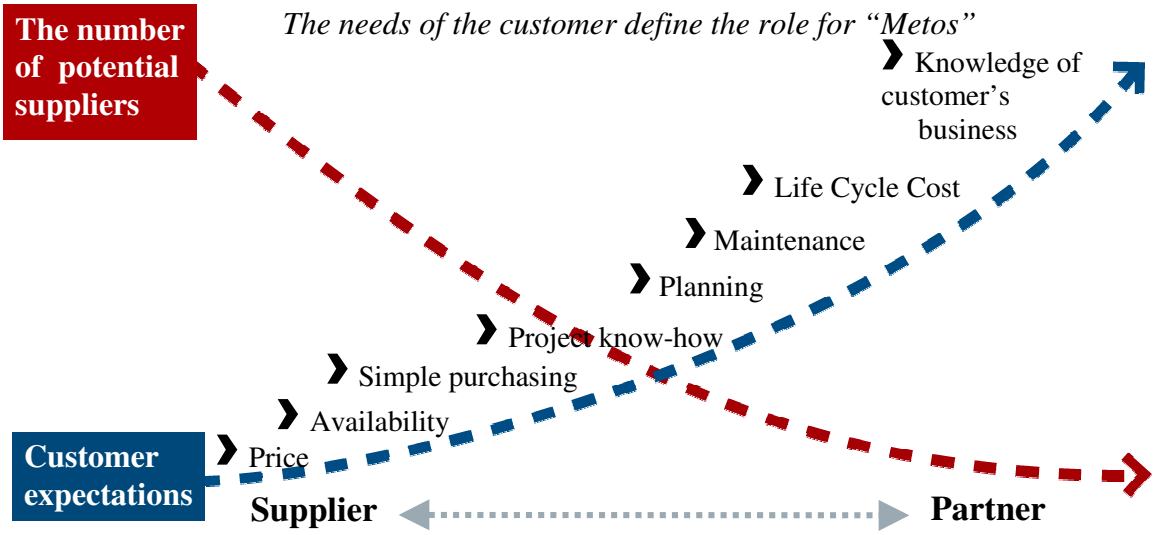


Figure 16. Customer Needs and Company "Metos" Behaviour Relationships

From Figure 16 we see that customer needs influence "Metos" behaviour. We even can say that the needs of customers define the role for "Metos".

"Metos" product development strategy must take into account each target market segment specific preferences and values. To know that at first of all company must to recognize its target market segments and its main customers groups. The company customers' segments are shown in Figure 17.

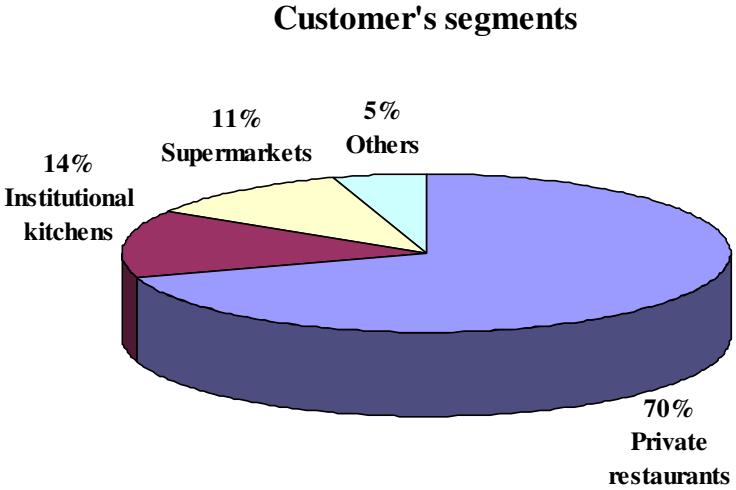


Figure 17. Customer's Segments

The Figure 17 shows that the biggest customer segment is private restaurants. It composes 70% of the market. Institutional kitchens, supermarkets and other customers compose left 30 %. Each of this market segment and company's customers' group have different characteristic, which company must take in to account in new product development. "Metos" customers groups are illustrated in Figure 18. The figures are taken form 3 years collected data in company "Metos" database

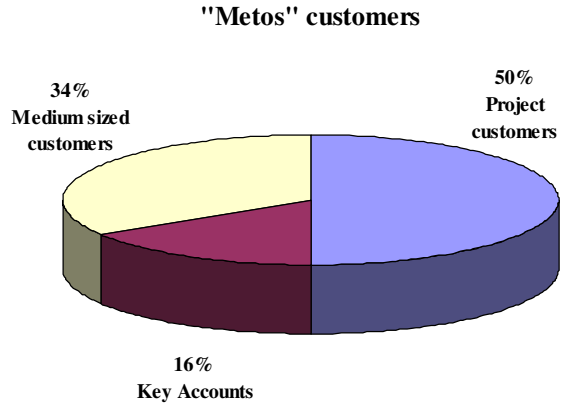


Figure 18. The Main "Metos" Customers Groups

As we see from the figure before, the biggest company customers group is – project customers. It means that customers trust for "Metos" company its entire professional kitchen establishment: from planning until installation and trainings. This customers' group trust all kitchen planning and installation for professionals, even they have to pay more for these services. It means that the biggest company's group of customers value good quality.

To recognize company's customers is very important as well as competition in the market. Company successful business a lot of depends from company internal environment. But the biggest challenges company face which emerges from external environment, because external environment is much harder to forecast and to control. To be competitive, to offer product with unique features which will be valued by customers, company always must to scan and analyse competition in its target market. The main company's competitors in Lithuania, its position in market share are shown in Figure 19.

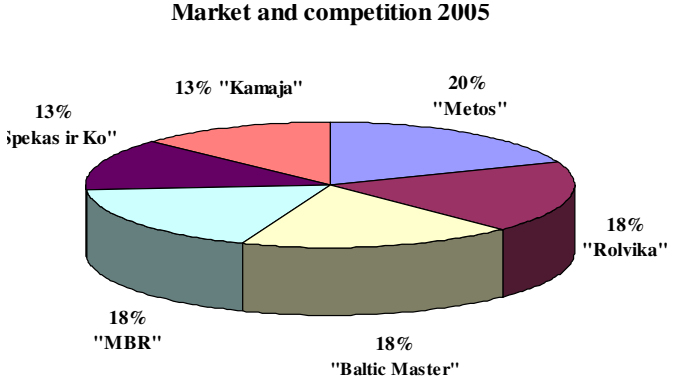


Figure 19. Market and Competition

As shows the Figure 19, a three biggest competitors for company "Metos" are "MBR", "Baltic Master" and "Rolvika". Competitors' scanning and analysis gives to "Metos" company opportunity to see its weaknesses and threats comparing with its rivals. This understanding can help to respond in time and to avoid some failures. In Table 8 is shown the main strengths and weaknesses of competitors, which we defined before, in Lithuania market for company "Metos".

Table 8. Competitors' Strengths and Weaknesses in the Kitchen Equipment Market

Company	***Strengths***	***Weaknesses***	***Strategy and/or recent development***
"METOS"	1. Use of new technology and foreign countries experience 2. Customers are satisfied with service		1. Production development 2. Prices reduction
ROLVIKA	1. The strongest and cheapest cold equipment seller for restaurants and shops 2. Flexible pricing policy 3. Produces neutral show cases for confectionery	1. Are quiet weak service 2. Clients are not satisfied with the quality of kitchen equipment	1. Will sell more cheap equipment on part payment for short money clients
MBR	1. Two years guarantee spear parts 2. Flexible payment, leasing good conditions 3. The newest information about goods	1. Weak service 2. Very weak services 3. Two little technological knowledge	1. Will sell more cheap equipment on part payment for short money clients
KAMAJA	1. Cheap and more expensive products for choose 2. Flexible pricing policy 3. Part payment 4. Delivery time 2-4 weeks	1. Too little knowledge 2. No manufacturing work with sub-contractors	1. Will sell more cheap equipment on part payment
BALTIC MASTER	1. Local produce of s/st furniture 2. Flexible pricing policy 3. Part payment 4. Delivery time 2-4 weeks	1. Not good service 2. Very poor technological planning	1. Production development 2. Will sell more cheap equipment on part payment

From the competitors' strengths and weaknesses (the 1st and the 2nd Table 8 columns) emerges a presumption about future competitors' technological and marketing strategies. Presumptions are shown in the last table column. This analysis helps at least a little bit to forecast, control, respond and ensure company's competitive position. It can be that "MBR", "Rolvika" and "Kamaja" in the future relay more and more on cheapest products don't concerning very much quality. "Baltic Master" will develop its technological capabilities and offer to a customers good quality products, lowering prices through experience or scale. I think the company's "Metos" differentiation technological strategy will help in the future, because competitors try to follow the cost leadership technological strategies. The main competitor in the future for company "Metos" can be "Baltic Master".

To choose on which product development to concentrate R&D efforts more, company must take in to account top most preferable and profitable product. In Figure 20 are illustrated "Metos" product group sales in percentage of 2003 09 01-2005 04 30 period total sales. The Figures are taken from company "Metos" database there are collected data about all the company's sales.

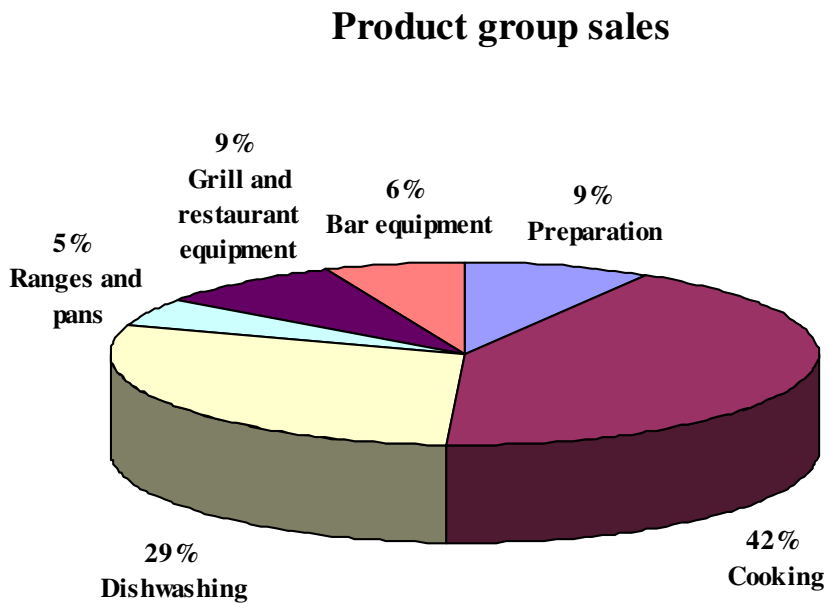


Figure 20. "Metos" Product Group Sales (2003 09 01- 2005 04 30)

How we see (Figure 20) most needed and preferable between customers - cooking equipment. The second group is dishwashing equipment. Company "Metos" margins ratio for all product groups are the same, thus the most profitable product group is cooking equipment group, second – dishwashing equipment group. To a most profitable product groups, company must pay more attention, than to other products groups, because these products generate more profit for company.

"Metos" product development strategy must take into account each product features and values preferred by customers. Company must regularly conduct customer surveys to study the target market and to determine its distinct peculiarities and preferences. A lot of surveys in company "Metos" are used to understand customers and to forecast preferences in the future. The example of survey which I offer to use within company is shown in appendix 1. This survey is created to analyze customer preferences and target market for particular product R&D process. The data must be collected from product managers, which better of all employees in company know about particular product customers' values and preferences. I thing this survey would be very useful for R&D process, because product managers best of all know about particular product, its much easy to collect than from all customers and product managers can be more objective than customers.

2. Securing technologies and products through advanced R&D efforts. Company must be able to dissect products in PLC different stages. In mature, declining stage is important to improve products features or to introduce new products in time. Company must to be always innovative; its own innovations replace with new company's "Metos" innovations. Or to sustain and strengthen its competitive position with new, improved product features which will be valued by customers. "Metos" must to be able to enhance the kitchen equipment performance. For that reason PLC must be taken in to account all the time.

Because for cooking equipment have been always paid big attention (how we already saw cooking equipment – product group No.1), its very important don't forget and others for company most profitable products. As wee saw, dishwashing equipment product group is the product group No.2. This obligate company for continuously dishwashing product group development and improvement.

A conveyor dishwashing machines sales in company "Metos" increasing quite fast. In all EU countries members' labour force is very expensive. It's one of external condition which for company "Metos" helps to promote and sell conveyor dishwashers successful. But the biggest problem is that the competition increasing more and more too. That's why we can thing that the product is in the growth stage of PLC. In Figure 21 is shown standard conveyor dishwasher place in PLC.

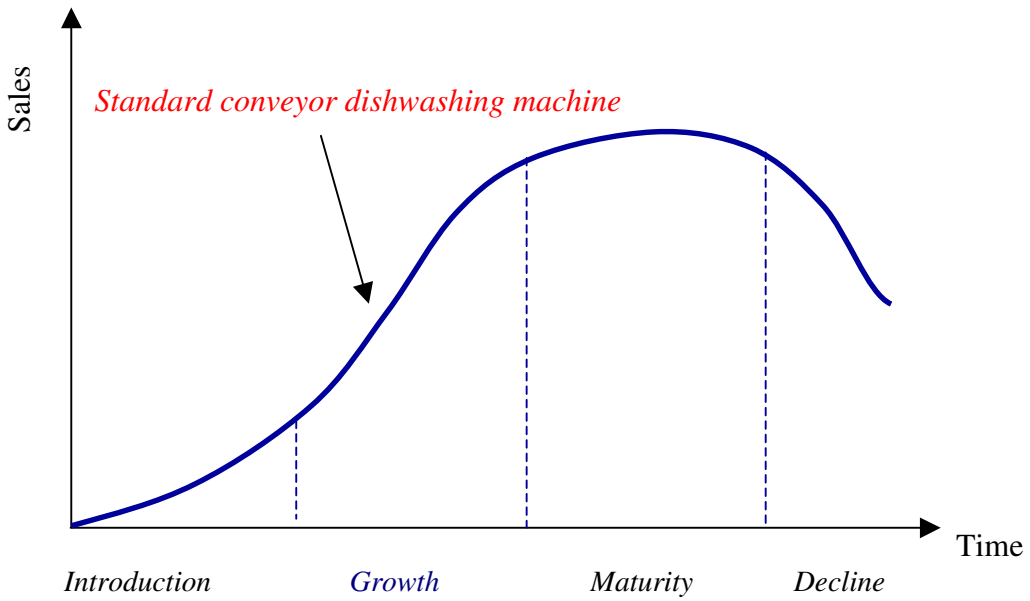


Figure 21. Standard Conveyor Dishwashing Machine Place in PLC

The different stages of conveyor dishwashing machine life cycle require different product characteristics, R&D strategies and innovation methods strategies. To secure conveyor dishwashing machine competitiveness, what with other products helps to secure overall business success, the "Metos" must take in to account PLC strategies all the time. The suited R&D strategies, innovation methods, recommended products characteristics according PLC stages are shown in Table 9.

Table 9. Product Characteristics, R&D Strategies and Innovation Methods according PLC stages

Stages ***Items***	*Introduction*	*Growth*	*Maturity*	*Decline*
Product characteristics	Basic requirements on functions	Added functions on products	Standard design	Minimization of differences of Technologies
R & D Strategies	Innovation leadership	Function leadership	Customer requirements leadership	Price leadership
Innovation methods	1. Personal inspiration 2. Brainstorming 3. Combination with applied science	1. Experience from research and development 2. Contradiction solving 3. Imitation	1. Robust design 2. Improvement on manufacturing process 3. Patent design around	1. Combinations of functions 2. Alternative material and technologies

As we see from Table 9 the best for "Metos" conveyor dishwashing machine to compete in market with added functions on product in this stage of PLC. According this research work theoretical studies to sustain competitive advantage company "Metos" must to play a functional leader role in the market.

3. Securing price competitiveness through continuous cost-cutting efforts. "Metos" promote the culture of convenience in the kitchen and try to offer best products to customers. With R&D efforts, company develops innovative products that will allow strengthening market share. With R&D efforts, company must to develop innovative production, marketing technologies too, which enables to cut cost and increase margins.

Technology presents competitive opportunities and threats to a company "Metos". The penalties for making the wrong strategic decisions are always damaging and can be fatal for company. Technology is a strategic factor ranking along side financial, market, organizational and production factors in determining the future of "Metos" business. As we already analysed in this thesis chapter, in the company's "Metos" target market operates the main 5 competitors, where 4 of them try to follow cost leadership strategy. This leads to reduced profit and provoke a ruinous price war. From company's customers analysis we clearly see that in the market are customers who seek products with high quality and are less concerned with price. And the products differentiation through technology is the most obvious way for company 'Metos" to sustain competitive advantage in the market. As we already saw - the technological development and improvement is the key to this. Because the conveyor dishwashing machine depends to a second most profitable product group in the company and is in the growth stage, it obligates company to continuously product development and improvement. And to reach the customers in the final market company must to have good marketing program which we will try to improve in further chapter.

2.3. "METOS ICS+" CONVEYOR DISHWASHING MACHINE MARKETING MIX

Marketing has changed over time as well as the wants and needs of "Metos" customers. In order for company to sell its products as successfully as possible, when they are crated, considering the customers needs, company's technological strategy, profitability, company need to look at the price to ensure it is not to cheap or to expensive; where are best to distribute; and finally, how company can create interest and awareness for products. The marketing concept has three main objectives in the "Metos":

- A customer orientation. Company's employees' task is to find out what customers need, want, prefer and provide it for them.
- A service orientation. It's crucial to make sure that everyone in company has the same objective – customer satisfaction. This is a total and integrated organizational effort.
- A profit orientation. To market produced goods and services that will earn the company a profit and enable to survive and to expand. Managers are responsible for getting everyone in "Metos" to establish and maintaining mutually beneficial relationships with all shareholders.

Managing the marketing process in company "Metos" involves four main factors which we will analyse and try to improve in this research work chapter:

1. designing want-satisfying products;
2. setting a price for the product;
3. distributing the product to a place where people will buy it;
4. promoting the product.

All products in company must to pass these 4 marketing factors. Conveyor dishwasher can't avoid it too. It's not enough to create good quality product and wait for success. It's crucial to have good marketing mix too. Marketing mix strategy for conveyor dishwashing machine is shown in Figure 22.

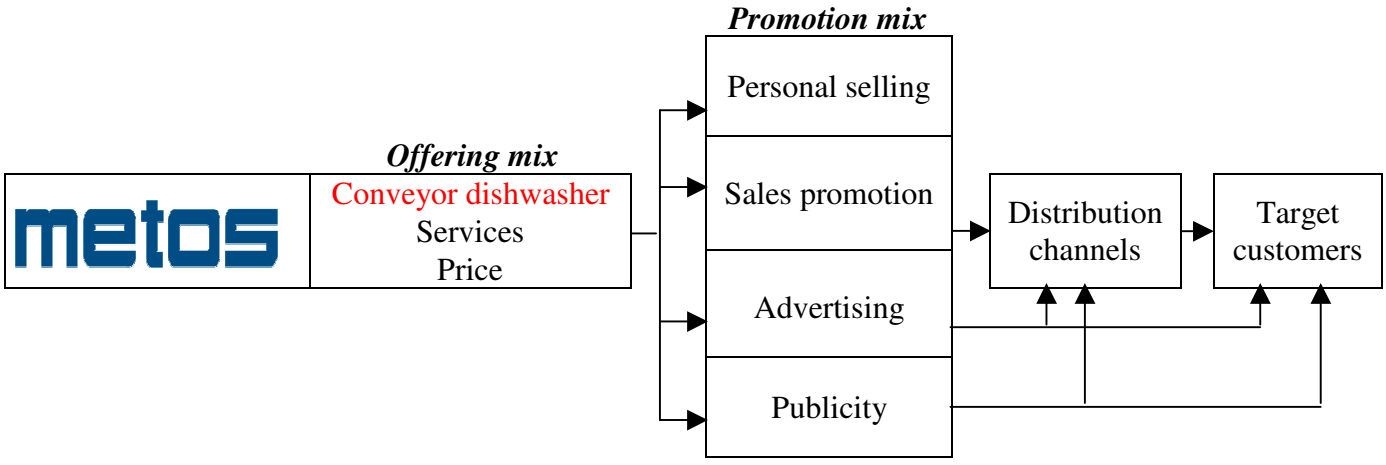


Figure 22. Marketing-Mix Strategy for Conveyor Dishwashing Machine

Like in Figure 22 shown, it's necessary to decide on conveyor dishwashing machine price, promotion and distribution channels. And to control conveyor dishwashing machine marketing mix successfully it is very important at first to understand PLC characteristics and role in marketing management. The Figure 23 shows in which stage of PLC is conveyor dishwashing machine, theory of sales, profit behaviour and sales. Sales, profit and competition in the growth stage are summarized and shown in Table 10.

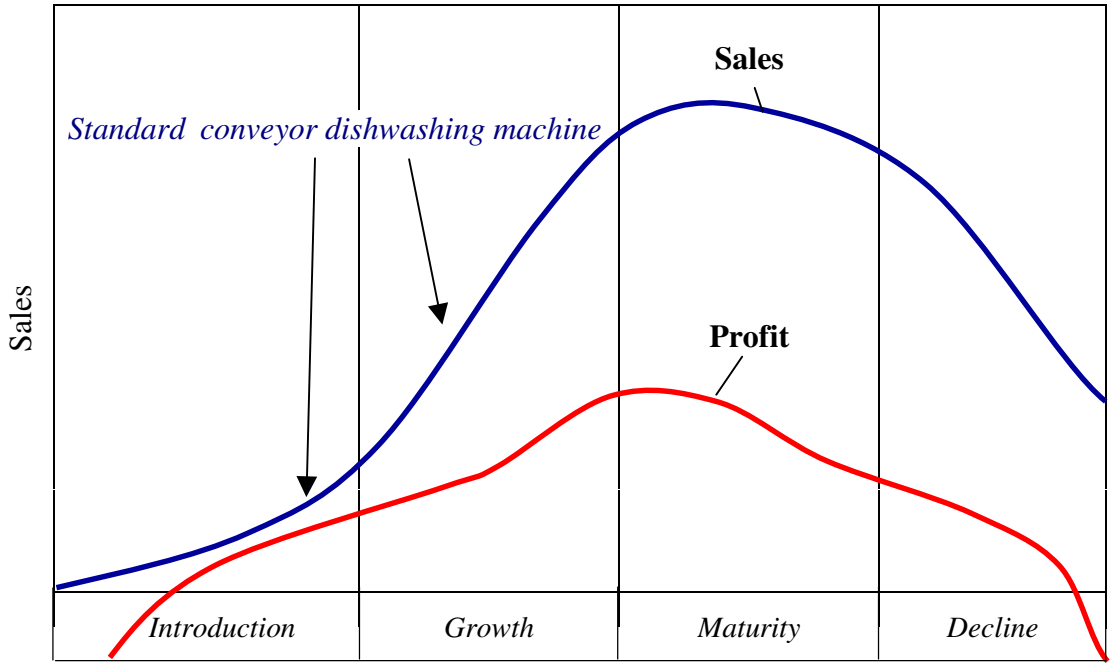


Figure 23. Standard Conveyor Dishwashing Machine Sales and Profit Behaviour According PLC theory

Table 10. Sales, Profit, and Competition in Growth stage

Life Cycle Stages	*Sales*	*Profit*	***Competitors***
Growth	Rapidly rising sales	Very high profits	Growing number

As we see from Figure 23 and Table 10, the growth stage is marked by a rapid climb in sales. Early adopters like the product, and additional consumers start buying it. New competitors enter, attracted by the opportunities. They introduce new product features and expand distribution.

The importance of the product life cycle to "Metos" marketers is this: different stages in the product life cycle call for different strategies. Each stages calls for multiple marketing mix changes. Knowing in what the life cycle stage a product is helps to "Metos" marketing managers to choose the right marketing mix strategy. Table 11 outlines the marketing mix decisions that might be made in grow stage for standard conveyor dishwashing machine.

Table 11. Marketing Mix Recommended for Conveyor Dishwashing Machine in the Growth Stage

Life Cycle Stage	***Marketing Mix Elements***			
	Product	*Price*	*Place*	***Promotion***
Growth	Improve product; keep mix limited	Adjust price to meet competition	Increase distribution	Heavy competitive advertising

A company in the growth stage faces a trade-off between high market share and high current profit. With improved conveyor dishwashing machine by spending money on promotion, and distribution, company can capture a dominant position. It forgoes maximum current profit in the hope of making even greater profits in the next stage. To sustain rapid market growth for "Metos" conveyor dishwashing machines in this PLC stage according theoretical researches are recommended these strategies:

- To improve product quality and add new product features and improved styling.
- To lowers price to attract price-sensitive buyers.
- To increase distribution coverage and to enter new distribution channels.
- To shifts from product-awareness advertising to product-preference advertising (Table 11).

These marketing mix strategies in PLC growth stage can help for company "Metos" to strengthen the firm's competitive position and thus to generate more profit. However company "Metos" can follow such strategies blind not considering technological and overall company's strategies.

- **Product: "Metos" innovative conveyor dishwashing machine**

The product is the most important aspect of the marketing mix for company "Metos" managers. By analysing the market and its requirements, company are able to change the product or develop the product in order to match target market requirements. "Metos" employees always remember that customer's needs are likely to change and therefore products should constantly change to reflect each market change, if company ignore these changes products will no longer be needed or desired by target customers.

Dishwashing concept. The conditions and circumstances during the growth, transportation and storing of food and raw materials of food have always been a subject of great interests for companies which operate in kitchen equipment production. Company "Metos" also have always been interested in cooking conditions. Because cooking equipment is No. 1 product group which generates biggest profit for enterprise. But new challenges company have faced and in dish washing conditions. Dishwashing equipment is No. 2 most profitable product group. The dishwashing process have entire circle and we illustrated it in Figure 24. Company spend a lot of time and money for products R&D with willingness to improve company's produced dishwashing group products and to serve the best products for customers with unique solutions. These efforts must help to strengthen the firm's competitive position and to generate more profit in the future.



Figure 24. Dishwashing Circle

As we see from Figure 24, the dishwashing material flow is an endless circle and the process contains the same stages, irrespective of whether small or large capacities are concerned. Handling dishes before and after the dishwasher causes the main use of labour costs in the process, whereas the dishwasher itself causes the main part of water, energy and chemical costs and lifetime environmental impact.

The "Metos" dishwashing concept is a business model providing customers with dishwashing solutions that produce the hygiene level specified by the customer at the lowest possible total costs during the life cycle (labour, investment, chemical, energy, water costs and cost for broken dishes and utensils).

Key factors for company success must to be:

- profound understanding of customers dishwashing process;
- complete and coherent product assortment;
- unique products to provide hygiene and process economy;
- specialised and competent distribution channels, both own and partners.

Three problems and solutions for savings in dishwashing process. "Metos ICS+" dishwashers apply the ingenious Intelligent Control operating system. "Metos ICS+" has been developed to increase the energy efficiency of tunnel dishwashers in professional kitchens. One of the biggest problems with the efficiency of the average tunnel dishwashers is that no dishes are washed for 65% of the operating time, due to the empty space between the racks. The researchers' objectives were to minimise the space between the racks, increase the efficiency of the dishwasher and reduces the consumption of energy, water and detergents.

Problem 1. A standard rack conveyor dishwasher runs idle, i.e. washes empty spaces between racks about 50 % of the operation time. Even if one corner of the rack is in the tank the machine is running and consequently a great amount of water, electricity and chemicals are used. The problem is illustrated in Figure 25.

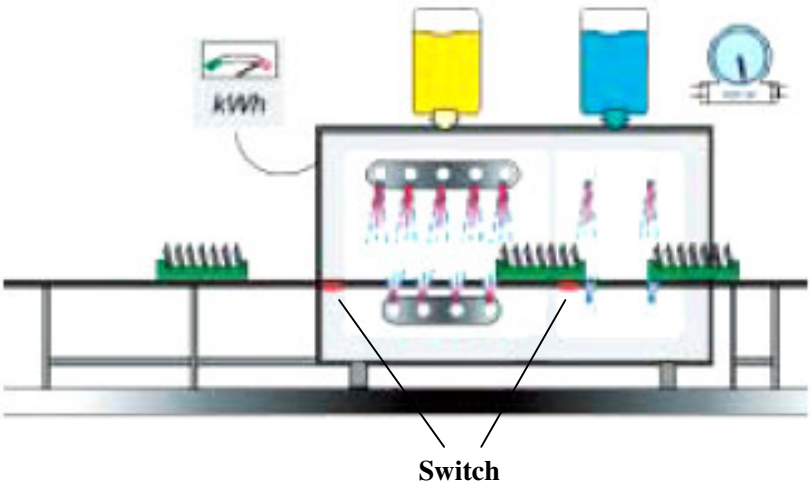


Figure 25. Problem No.1

Solution 1. The" Metos ICS+" controls the rack queue. When the sensor (photocell) detects an empty space in the rack queue, the machine is paused until the next rack arrives. In the stand-by position the washing pumps are switched off. The dishwasher can be started manually, if necessary. If the rack stays in the machine over 5 minutes, it will start automatically. The solution No.1 shown in Figure 26.

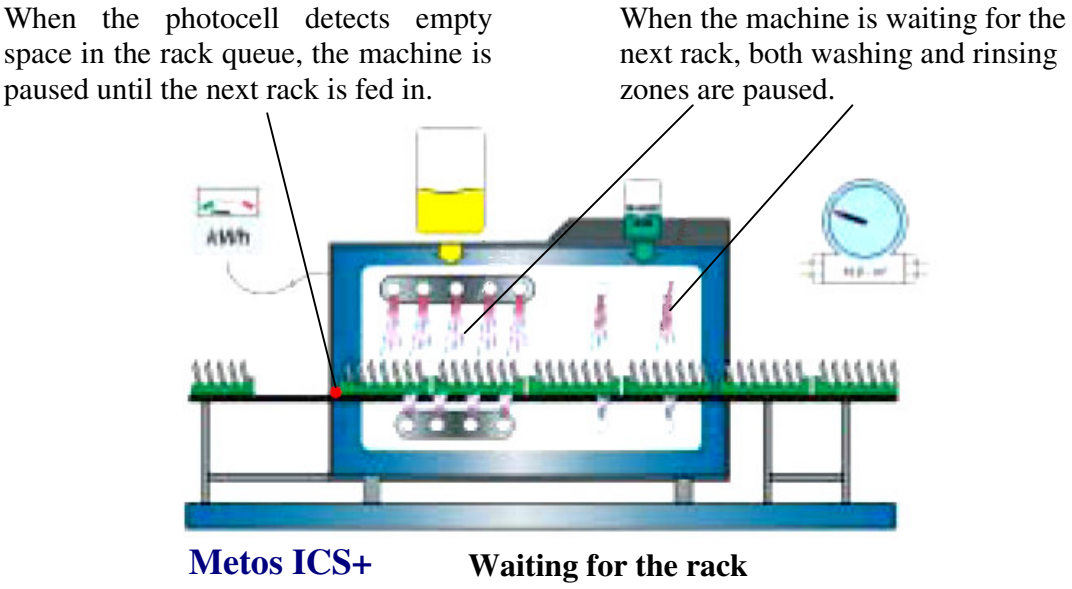
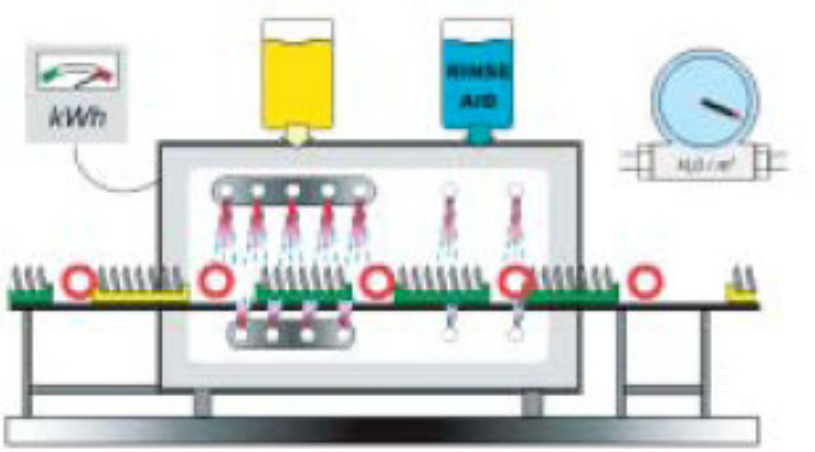


Figure 26. Solution No.1

Problem 2. Most of the rack conveyor machines have two conveyor speeds. Programme 1= faster programme (100 racks/h) has a final rinse time of 36 seconds per rack. Programme 2= slower programme (50 racks/h) has a final rinse time of 72 seconds per rack. In Figure 27 we see problem No. 2 illustration. With the slower programme fresh water consumption is doubled, because the rack moves through the rinse zone with a slower speed. Consequently the costs of fresh water, electricity and chemicals are doubled.

Standard dishwasher
faster programme
100 racks/h
Rinse time 36 sec. / rack

Standard dishwasher
slower programme
50 racks/h
Rinse time 72 sec. / rack



"Metos" ICS+ **Waiting for the rack**

Figure 27. Problem No.2

Solution 2. The ICS+ operating system divides the washing process into two cycles, a quick transfer wash and a more intensive power wash. During the power wash the rack remains stationary in the wash zone. During the transfer cycle the rack is transferred through the rinse zone. To optimise the fresh water consumption in final rinse for adequate and safe hygiene level each rack is rinsed for 14 seconds. This time is constant for both the slower programme (50 racks/h) as well as for the faster programme (100 racks/h). The fresh water consumption in final rinse per rack is only 1,4 litres. "Metos ICS+" make adjustable contact time possible with constant rinse time principle. Thus when the fresh water consumption increases the washing process time increases too, i.e. the slower conveyor speed may even double the rinsing time comparing to the faster programme. The new "Metos ICS+" final rinse fresh water consumption is always constant, with both the faster and slower programme. The solution for problem No.2 is illustrated in Figure 28.

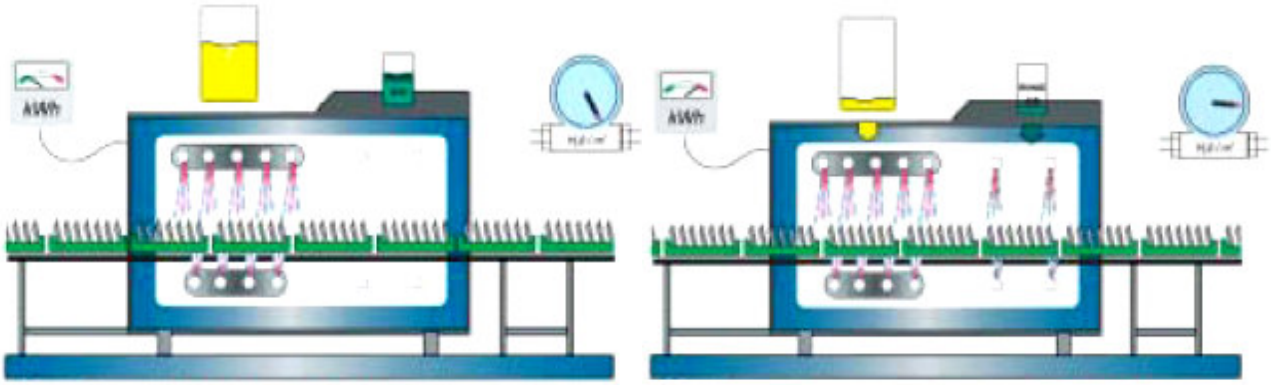


Figure 28. Solution No.2

Problem 3. The traditional conveyor principle of a rack conveyor machine has equal movement forward and backward. During the time when the conveyor is moving backward small hooks keep the racks in still position. In practice this means that 50 % of the time a rack spends inside the rack conveyor machine it is standing still. In final rinse this is especially critical as the traditional principle causes uneven final rinse result due to uneven water distribution. In other words some of the dishes are rinsed with multiple amount of water compared to others. Figure 28 illustrates problem No.3.

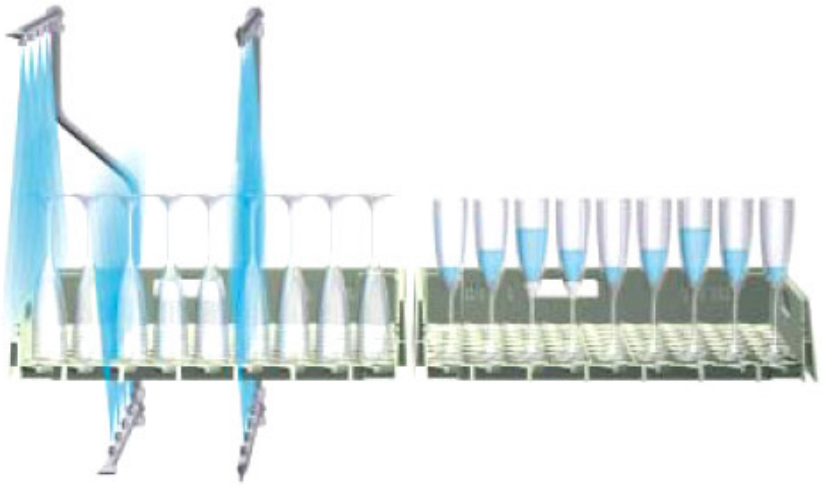


Figure 28. Problem No.3

Solution 3. The “Metos ICS+” machine uses a double transport system. With DTS the time for a rack standing still is taken down close to zero. This technique ensures more even distribution of final rinse water and thus ensures best possible final rinse result. In the new “Metos ICS+” machine with DTS the final rinse water is distributed more evenly for each glass. The solution No. 3 is shown in Figure 29. The second rack with glasses standing illustrates the amount of final rinse water used for each glass in new “Metos ICS+” with DTS. Here all the glasses get nearly the same amount of water.

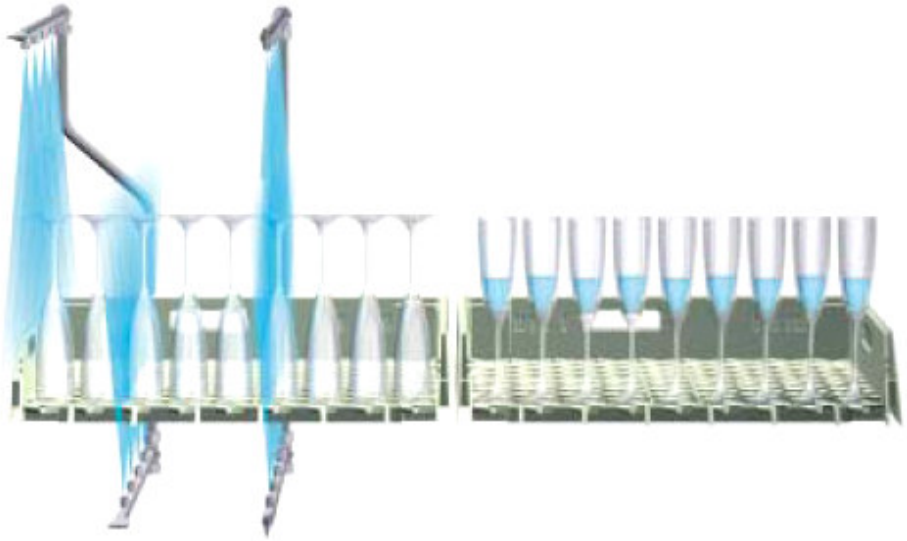


Figure 29. Solution No.3

In traditional rack conveyor the final rinse water is distributed unevenly. This is due to the fact, that the rack is standing still 50 % of rinsing and washing time. The second rack with glasses standing illustrates the amount of final rinse water used for each glass in traditional rack conveyor machine. The Figure 28 shows, that some of the glasses get only 20 % of the water compared to glasses that spend longest time in final rinse.

Best control for the operator. The "Metos ICS+" enables nearly stepless adjustment of contact time (ACT) and capacity. Contact time is one of the main factors for successful washing result. Contact time means the time that dishes spend inside the machine starting from the first pump aided pre-wash zone up to the fresh water final rinse. According to the German DIN 10510 contact time in a rack conveyor machine should be 120 seconds. Even in many cases good washing result can be reached already with shorter contact time, the control over the contact time is always as important. The "Metos ICS+" provides better control over contact time than any other rack conveyor machine.

- *Contact time control panel.* Help for easy adjustment of contact time. This panel provides easy adjustment of contact time. In "Metos ICS+" machine the contact time starts from 40 seconds and can be adjusted up to 160 seconds. Lightly soiled dishes such as trays can be washed with shorter contact time. Heavily soiled goods such as food preparation utensils require a long contact time. The new "Metos ICS+" machine also informs and guides the operator.
- *Operating panel.* Operating instructions customer can see on the display (several languages available). The display indicates the progress of the wash. The display provides on-line user guidance. The machine gives a warning, if the water supply is interrupted; the overflow pipes are not in place or for any reason if the machine is not ready for use. The unit controls the temperatures of the wash tanks and the final rinse and provides a low temperature warning. The washer controls the water flow of the final

rinse and generates a crystal-clear rinsing result. The number of washed racks and the water consumption can be read on the display. Error is indicated on the display. In a service situation the most important components can be tested by push buttons. The Contact time control and operating panels are illustrated in Figure 30.



Figure 30. Contact Time Control and Operating Panels

"Metos" ICS+ functions. The dishwashing process in "Metos ICS+" we illustrated in Figure 31. The technical data of this machine we can find in apexes 2, 3, 4 and 5. "Metos ICS+" conveyor dishwashing machine have the main 4 functions:

1. Pre-wash without intermediate rinse. During pre-wash the dishes are washed in 40°C water with a light dosage of detergent. The rinse water overflow from the final rinse is partly directed straight to pre-wash zone.

2. Pre-wash with intermediate rinse. The pre-wash function is the same as described above. Before the arrival of the rack in the chemical wash (3) the intermediate rinse takes place. The intermediate rinse reduces the soiling of the wash water in the chemical tank meaning a longer interval between changes of the wash water. This saves on water and detergent.

3. Chemical wash. Wash with water of approximately 60°C. Greasy dirt requires a temperature above 50°C to be dissolved and the detergents have their best performance for removing dirt at approximately 60°C.

4. Double final rinse. The double final rinse guarantees the best washing result (e.g. a perfectly clear drinking glass). The double final rinse also reduces water consumption. The rinsing is done first with recycled water and then with fresh 85°C water. About 25 % of the final rinse water flows into the chemical tank and 75 % are redirected to pre-wash and intermediate rinse.

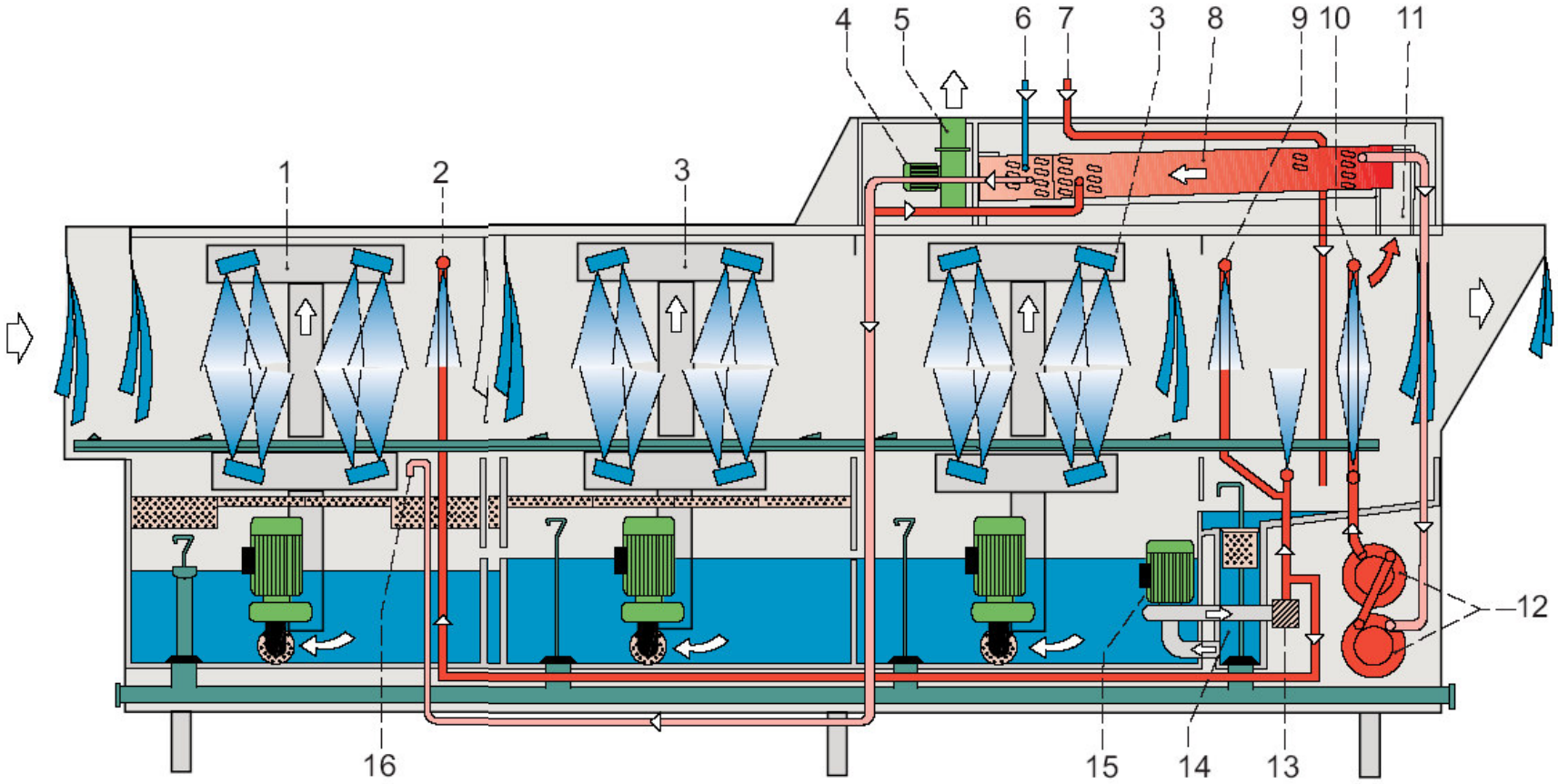


Figure 31. Dishwashing Process in “Metos ICS+”

1. Pre-wash
2. Intermediate rinse
3. Chemical wash
4. Condensing fan
5. Exhaust from condensing fan
6. Cold water connection
7. Hot water connection
8. Heat recovery unit
9. Rinse arm for re-circulating final rinse water
10. Fresh water final rinse
11. Air intake for heat recovery unit
12. Booster heaters
13. Filter for re-circulating final rinse water
14. Tank for re-circulating final rinse water
15. Pump for re-circulating final rinse and intermediate rinse water
16. Cold water for controlling the temperature of the pre-wash

- **Price**

Changing the product to reflect the product's life cycle is only one part of the essence of a well balanced marketing mix, and so price enters the second important consideration of the "Metos ICS+" conveyor dishwashing machine marketing mix. When company "Metos" setting a price on a range for products, company need to ensure that can recoup any overheads, compete with rival companies and charge a price company's customers are willing to pay.

The company "Metos" first must to decide where it wants to position with conveyor dishwasher in market. The clearest a company's objectives, the easier is to set price. "Metos" have to pursue any of four major objectives through pricing: survival, maximum current profit, maximum market share, or product-quality leadership. The pricing strategy must to suit with overall company's strategy. We already analyse brand strategy and technological strategies in research work unit 2.2., and clear can see the objective is to be product-quality leadership. But at first lets to analyse conveyor dishwasher machine market cost. "Metos ICS+" cost addition is illustrated in Figure 32.

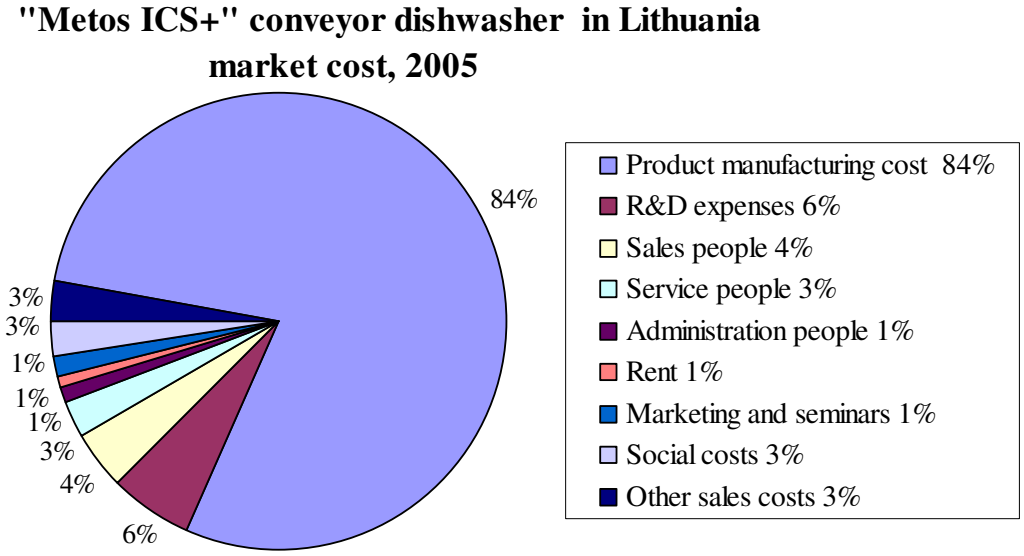


Figure 32. Conveyor Dishwashing Machine Cost Addition in Lithuania Market

As we can see from Figure 32, the biggest part of market cost is product manufacturing cost, the second biggest part – R&D expenses. Company "Metos ICS+" conveyor dishwashing machine is priced pursued skimming strategy. Improved dishwashing machine is priced high to cover R&D expenses in shorter term and to make optimum profit. Skimming price strategy suits when product is in the PLC introduction stage, while there's little competition in market. Today "Metos" in Lithuanian market faces with big competition. Price is the main object of discussions within company's employees. Some employees' claims that lower price can help to increase "Metos ICS+" conveyor dishwasher sales.

In this research work 2.2 part I analyse company "Metos" brand and technological strategy. In all research work I try to find out and emphasize relationships between technological company's strategy, product life cycle and marketing mix. I already analyse competitive advantage with pursued company's differentiation technological strategy. From theoretical researches and company "Metos" analysis I think pricing strategy is chosen right. The primary aim of product differentiation is to reduce price competition. Pursued differentiation technological strategy and brand strategy, supports to price innovative "Metos ICS+" conveyor dishwashing machine bigger price.

So now one of the biggest questions in company is: how to convince customers to buy, increase conveyor dishwashing machine sales, in the same time to cover R&D expenses as possible in shorter term, to gain profit and to be competitive in market not lowering the product price? For that reason I suggest to make economical calculations which will help for sales managers to convince the customers to buy this product not only because of good quality, but because the energy savings, lower running cost and total costs savings too.

Economical calculations and benefit for customers. "Metos ICS+" has been developed to increase the energy efficiency of tunnel dishwashers in professional kitchens. One of the reasons – rack conveyor dishwashing machines determine the biggest expenses in a kitchen. The rack conveyor electricity, water and detergents consumptions are shown in Figure 33. The operating costs of the "Metos ICS+" dishwashers are lower than any other rack conveyor dishwasher. "Metos ICS"+ is marginally more expensive than an ordinary dishwasher at the point of purchase only. Savings start as soon as customer will use the unit. A dishwasher investment is not about the machine price only, but is a decision that determines the amount of running costs. It is a decision many times more valuable than just the machine.

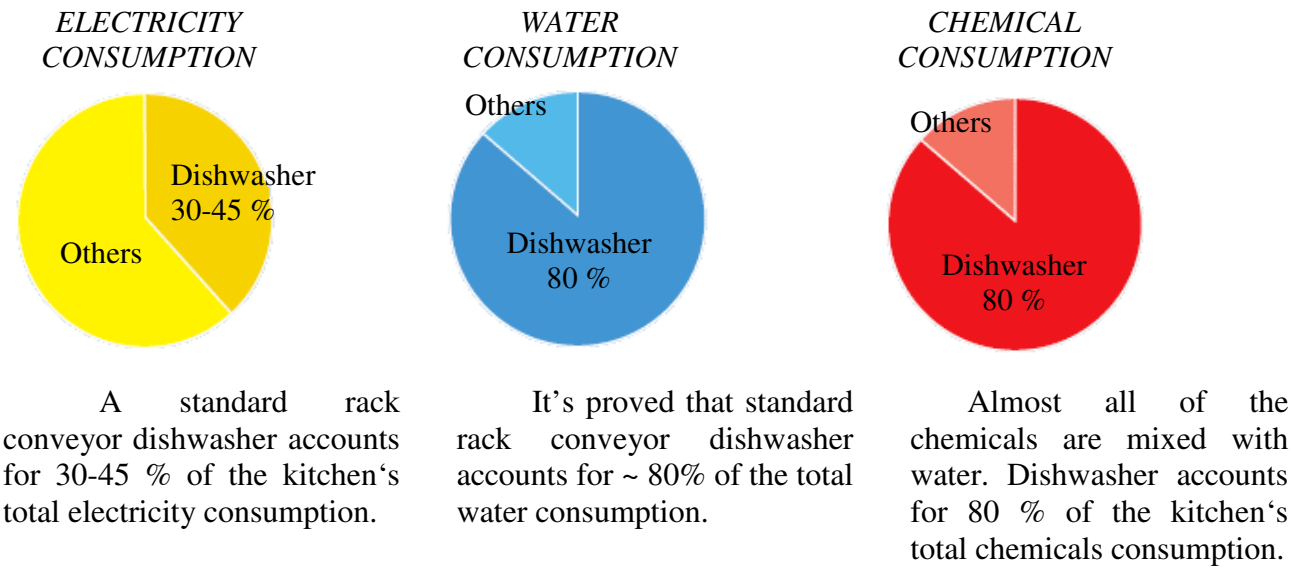


Figure 33. Tunnel Dishwasher Environmental Load

"Metos ICS+" conveyor dishwashing machine advantages for customers, comparing with others standard conveyor machines:

- because of automatic batcher are economically used detergents;
- obvious energy savings;
- short 2-3 min washing period process with opportunity to choose washing program;
- according hygienic and disinfection requirements guarantied needed water temperature;
- optimal organized and used working space;
- machines have noise and heat isolations.

To prove "Metos ICS+" dishwashing machine savings the dishwasher was tested in Finland, city Espoo. The test kitchen was supposed to use a competitor's rack conveyor machine with best energy savings technology. The object was to compare running cost and washing result of "Electrolux Wachtech 100 ER ECO PLUS". The Technical centre of city Espoo installed kWh meter to measure the electricity consumption and water flow meters for measuring of both cold and hot water consumption. The detergent consumption was measured with scale. There were also meters installed for measuring of running time of the washing pumps and final rinse time. The amount of washed racks was counted with the rack counter of the "Metos ICS+". The average washing amount was the same on both measuring periods. The results of test are shown in Table 12.

Table 12. Summarised Test results

Components	Components	*"Electrolux Wash Tech 100 ER ECO PLUS"*		*"Metos ICS+"*		Savings
	Charge per component	Consumption per rack	Cost per rack	Consumption per rack	Cost per rack	%
Detergent	8,00 Lt/kg	6,34 g	5,07 cent	3,37 g	2,70 cent	-47 %
Rinse Aid*	14,50 Lt/kg	0,86 g	1,25 cent	0,29 g	0,42 cent	-66 %
Cold water	4,01 Lt/m^3	4,30 l	1,72 cent	1,45 l	0, 58 cent	-66 %
Hot water	10,58 Lt/m^3	1,20 l	1,27 cent	1,15 l	1,22 cent	-4 %
Electricity	0,3422 Lt/kWh	0,52 kWh	17,80 cent	0,27 kWh	9,24 cent	-48 %
Total:			**27,11 cent**		**14,16 cent**	**≈ -50 %**

* consumption is calculated with concentration 0,2 g/l.

As we see from Table 12 the obvious benefit for "Metos" customers is energy saving. The consumption of detergent and the rinsing aid is comparable to final rinse water consumption. Water consumption shows as cold water consumption which is 66 % less. In detergent consumption the saving was 47 % due to the first tank filling (hot water). Hot water consumption is due to wash tank filling,

where no significant difference was detected (saving 4 %). In the rack conveyor machine rinse water heating account most of the electricity consumption, however, also washing pumps and other heating elements consume energy. The total saving effect in electricity consumption totaled 48 %. The result prove that the running costs of the "Metos ICS+" are ≈ 50 % lower in the same conditions with "Electrolux Wash Tech 100 ER ECO PLUS". In the wash result no differences where detected.

Comparison of the technical information provided by the manufacturer can lead to wrong conclusions. In Table 13 we will summarise the technical data from "Electrolux Wachtech 100 ER ECO PLUS" and "Metos ICS+" technical charts.

Table 13. Technical Data of the Field-tested Machines

Machine type	*"Electrolux Wash Tech 100 ER ECO PLUS"*	*"Metos ICS+"*
Capacity	100/67 rack/hour	100/70 rack/hour
Pre-wash tank	No	No
Chemical wash	Yes	Yes
Double final rinse	Yes	Yes
El. Connection	27,8 kW	31,9 kW
Dryer	8,5 kW	6,7 kW
Final rinse water flow	300 l/h	360 l/h
Energy savings	Energy Saving Device **	Energy Saving Device *
Tank filling	144 l	100 l

* 1 – phased combined steam condenser and heat recovery;
** 2 – phased combined stem condenser and heat recovery.

Table 13 highlights an electric power and rinsing water flow of the "Electrolux Wash Tech 100 ER ECO PLUS" are lower than those of the "Metos ICS+". The "Electrolux Wash Tech 100 ER ECO PLUS" has also double heat recovery where as the "Metos ICS+" has single. In simple of the higher connection power and momentary bigger rinsing water flow, the electricity consumption is 48 % lower and the rinsing water consumption is 66 % lower with the "Metos ICS+" machine. The advantage of the ICS+ washing programs is based on the efficient utilising of the different zones of the machine. Therefore usage and consumption of each zone is optimised. This can be realised in savings consumption, not in technical data charts.

All customers than have to make decision buy or not to buy, face the situation when purchase prices and running costs need to be compared. The cheapest machine does not always have lowest running costs. Based on this field test an evaluation of the total life cycle costs and the environmental impact can be made. In the table below I will present couple example which can help to see differences.

Table 14. Running Costs

Running cost	*"Electrolux Wash Tech 100 ER ECO PLUS" (27,11 cents/rack)*	*"Metos ICS+" (14,16 cents/rack)*	Saving in 1 year	Saving in 5 year	Saving in 7 year
Scholl 200 racks/day (190 days a year)	10 301 Lt/year	5 381 Lt/year	4 920 Lt	24 600 Lt	34 440 Lt
Canteen 250 racks/day (250 days a year)	16 944 Lt/year	8 850 Lt/year	8 094 Lt	40 470 Lt	56 658 Lt
Restaurant 300 racks/day (365 days a year)	29 686 Lt/year	15 505 Lt/year	14 181 Lt	70 905 Lt	99 267 Lt
Centralised kitchen 400 racks/day (365 days a year)	39 580 Lt/year	20 674 Lt/year	18 906 Lt	94 530 Lt	132 342 Lt

In Table 14 are shown 4 different examples of running cost calculations. We clearly can see the big differences in running cost and the big savings, which company can gain with acquired "Metos ICS+" conveyor dishwasher. The savings after 5 years even covers all "Metos ICS+" dishwashing machine purchasing price in example 4. Further we will analyse one of examples (3rd in Table 14) more detailed.

"Electrolux Wash Tech 100 ER ECO PLUS" (27,11 cents/rack)	
Investment costs (product price)	43 700 Lt
Running costs in 1 year	29 686 Lt
Running costs in 5 year	148 430 Lt
Running costs in 7 year	207 802 Lt
Total (in 7 years)	**429 618 Lt**

"Metos ICS+" (14,16 cents/rack)	
Investment costs (product price)	60 000 Lt
Running costs in 1 year	15 505 Lt
Running costs in 5 year	77 525 Lt
Running costs in 7 year	108 535 Lt
Total (in 7 years)	**261 565 Lt**

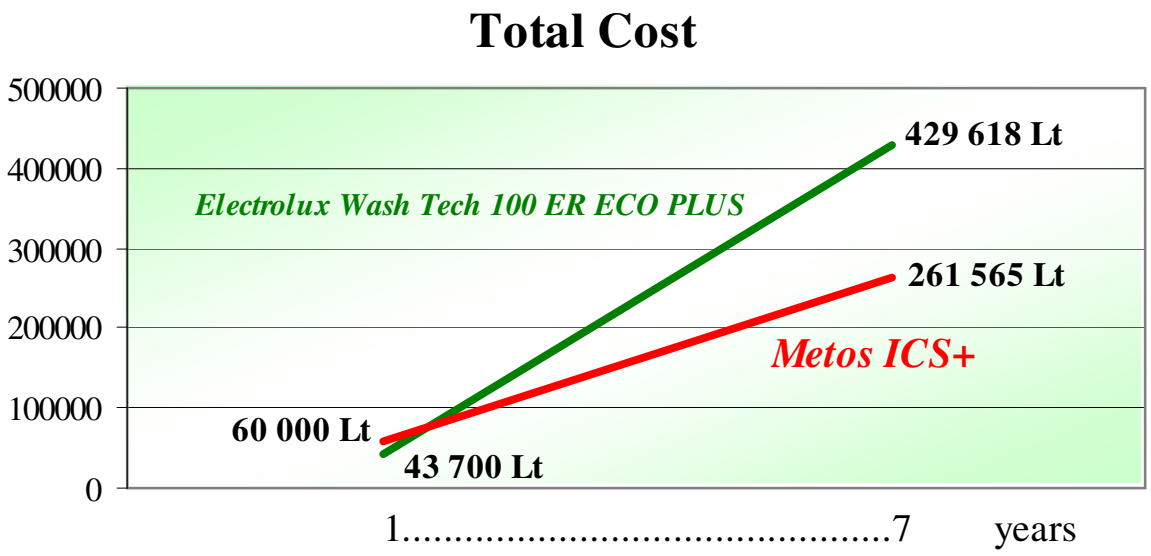


Figure 34. Total Costs

In the Figure 34 is shown a total costs calculations. The calculation is based on field measurements in a restaurant washing 300 racks per day, 365 days per year. It means that 10 9500 racks per 1 year, 547 500 racks per 5 years and 766 500 racks per 7 years. After 7 years the "Electrolux Wash Tech 100 ER ECO PLUS" total cost is 429 618 Lt and "Metos ICS+" total cost is 261 565 Lt. The total dishwashing machines life cycle costs consistence is shown in Figure 35.

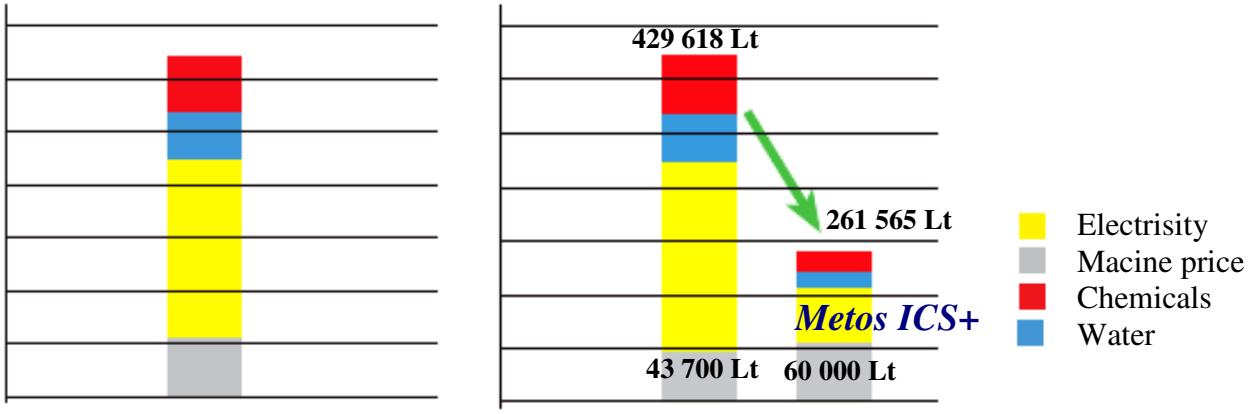


Figure 35. Total life cycle costs consistence

As we see from Figure 35, a rack conveyor dishwasher is an investment where the purchase price accounts for only 10 – 30 % of the total life cycle costs and the operational costs (water, electricity, chemicals) account for 70-90 % of total life cycle costs. "Metos ICS+" rack conveyor dishwasher moves the operational economy to an entire new level. "Metos ICS"+ is marginally more expensive than the "Electrolux Wash Tech 100 ER ECO PLUS" conveyor dishwashing machine at the point of purchase only. Savings start as soon as customer will use the unit. The running costs of the new "Metos ICS+" are 50 % lower than in "Electrolux Wash Tech 100 ER ECO PLUS". According this analysed example the restaurant will save about 168 053 Lt per 7 years with pursued "Metos ICS+" conveyor dishwashing machine. It's even 2,8 times more than "Metos ICS+" purchase price.

The same calculations can be done for every particular customer, which is interested in buying conveyor dishwashing machine. The calculations can be done comparing every other dishwashing machine with "Metos ICS+". The managers can even calculate and compare a conveyor dishwashing machine with cupola or other not conveyor dishwashing machines. Just in calculations must be included expenses for labour force salaries and facilities space. Because we become the members of EU, the energy prices and labour force salaries in the future increase. It must be always emphasized for customers and can be done calculations with comparison of savings taking the energy prices from any other EU country member. The calculations are not difficult and it wouldn't take much time for the sales managers. But for customer will bring real feeling of savings and benefit which he will get pursued "Metos ICS+" conveyor dishwashing machine. I think it is very good way to convince customers to buy the product.

- **Place**

Place in company “Metos” marketing mix strategy is concerned with all the decisions involved in getting the product to the target market’s place. “Metos” conveyor dishwasher ICS+ have to be moved from where it’s produced to a convenient place where consumer can see and pursue. A product isn’t much good to a customer if it isn’t available when and where it’s wanted and needed.

Company “Metos” product reaches customers through a channel of distribution. It involves functions such as transportation, storage, and activities such as purchasing goods, receiving them, moving them and shipping them to final users. How efficiently those tasks are performed often make the difference between success and failure of the whole system. “Metos” channels of distribution must to ensure communication flows, the flow of money and “Metos” brand to product. The company‘s channels of distribution also must help to ensure right quantity of product will be available when and where needed in the same time consider inventory turnover.

Company‘s “Metos” channel system is quite short. “Metos” products distribution channel is shown in Figure 36.

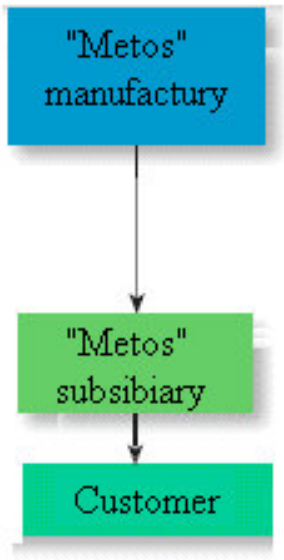


Figure 36. Company “Metos” Distribution Channel

How we see form Figure 36, it runs from a producer to a subsidiary and from subsidiary to a final customer. “Metos” company try to follow exclusive distribution strategy. Company use only representative owned by company in a given area. Thus following exclusive distribution strategy the subsidiary:

- carry more inventory;
- ensure best quality services;
- ensure the brand.

"Metos ICS+" conveyor dishwashing machine will be moved through the same distribution channels, because the target market is the same (several different channels of distribution may be needed if company would have several different target markets). According theoretical studies of this research work, considering the PLC stages in the growth stage is recommended intensive distribution channels. I thing that distribution strategy is chosen right and we don't need to improve it. Company takes in to account technological, brand and overall company's strategy when decide on distribution channels. The main disadvantage of this pursued distribution strategy for company "Metos" is that company must carry inventory by itself. Advantages of the pursued distribution system for company "Metos" is obvious:

- Direct contact with customers, what's allows early to see occurring changes, adapt or response to the changes.
- Complete control over product range, how it is sold and at what price.
- Complete control on brand.
- Best quality services.
- Skilled personnel.

This pursued distribution strategy fits with product assortment, technological strategy, brand strategy and overall company's business strategy. "Metos" distribution strategy chosen right supports all the company's business, and help to reach target market together with other marketing mix components.

- **Promotion**

The last, but not the least component of marketing mix which we will analyse is promotion. Market research helps to recognize company's marketing managers who are the best market segments (Figure 17) and to aim "Metos" company promotion towards. The message of promotion must be focused towards the market segment and it must relate to the promotional program objectives. Company "Metos" marketing managers must time promotion, when and where is the optimum impact likely to be. Promotional technique and methods must be the most effective and to have the right impact on the company customers. The cost varies from method to method. Marketing managers must to ensure that the blend of selected promotion technique and methods is cost effective for company. A bad decision could cost for company a lot of money with poor results

Promotion in company "Metos" needs to be carefully planned, and it is very important to decide on a promotional plan to each product in the company's assortment. It is vital to tell company's customers about products. The promotional program should be designed for improved "Metos ICS+" conveyor dishwasher machine too. The company pay big attention to its brand strategy and management, but sometimes on the single products the promotion strategy is quiet poor. The promotional program for "Metos ICS+" dishwasher machine is quite abandoned. Obsolete promotional program is still used, without emphasize of improved quality and product features and need to be renewed. According this

research work theoretical studies when the product is in the grow stage of PLC is recommended to shift from product-awareness advertising to product-preference advertising. The shortest way to convince customers to prefer and to buy a product is good arguments. Improved quality, features and savings of "Metos ICS+" conveyor dishwashing machine must be emphasized in all product promotional program.

Promotion includes advertising, promotion, publicity and selling of a product. We will distinguish into two categories, 1) personal selling and 2) advertising, promotion and publicity. The Figure 37 shows the main components needed for "Metos ICS+" conveyor dishwasher promotional program.

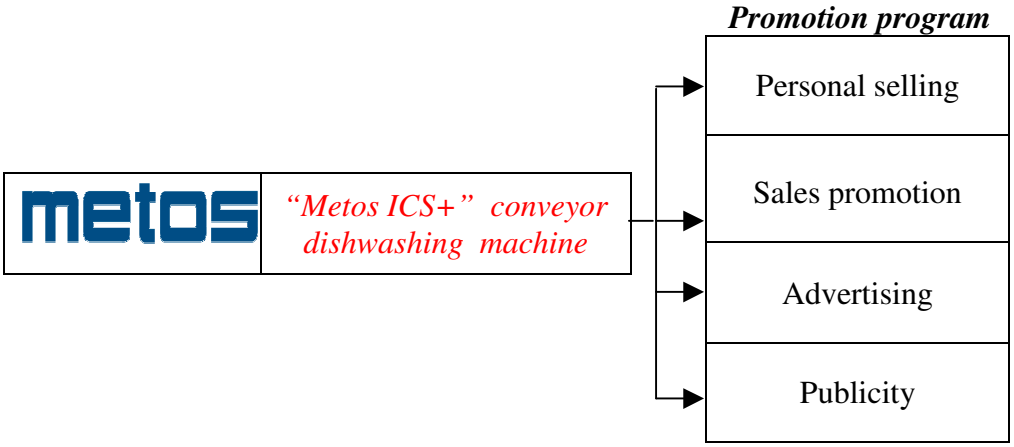


Figure 37. "Metos ICS+" Conveyor Dishwashing Machine Promotion Program

Table 15. Promotion Categories and Technique Analysis

Category	*Description*	*Advantages*	*Disadvantages*	*Technique*	*Evaluation*
Personal selling	Direct spoken communication between sellers and potential customers	Lets the sales person adapt the firm's marketing mix to each potential customer.	Individual attention comes at a price; can be very expensive. Often has to be blended with second category.	• Face-to-face	10
				• Telephone,	10
				• Internet	10
Advertising, publicity and promotion	Communicating with large numbers of customers at the same time.	In shorter term helps to reach target customers.	Not flexible marketing mix to each potential customer.	• TV	2
				• Radio	3
				• Newspapers	6
				• Magazines	4
				• Special trade journals	9
				• Business directories	4
				• Exhibitions	8
				• Trade fairs	8
				• Sponsoring events	7
				• Internet	10

The Figure 37 shows the main components needed for "Metos ICS+" conveyor dishwasher promotional program. Considering these main components in Table 15 are shown importance, advantages and disadvantages of these promotion categories and techniques. The column "evaluation" we see assessment of benefit from promotion categories techniques. From this table we clearly can see the main most beneficial and right promotion techniques. The best are evaluated personal selling, special trade journals, Internet, business directories. This is because company operates in B2B market. Consider this analysis and with respect to technological, brand and overall business strategy I suggest new improved promotion program for "Metos ICS+" conveyor dishwashing machine. The improved promotional program is shown in Table 16.

Table 16. Promotion Program for "Metos ICS+" Conveyor Dishwashing Machine

Category	*Technique*	*Implementation*
Personal selling	Face-to-face	Special offers for potential customers with detailed economical calculations suggested in part 2.3.2.
	Telephone	
	Internet	
Advertising, publicity and promotion	Newspapers	Special articles about "Metos" conveyor dishwashing machine ICS+ environmental friendliness and energy savings.
	Special trade journals	A special articles in company's sponsored journals "Virejo kepure" and "Receptai". Articles must emphasize "Metos" dishwashing machine environmental friendliness and energy savings, with same summarized examples of economical calculations suggested in part 2.3.2.
	Exhibitions	Seminars and presentations with demonstrations of "Metos" conveyor dishwashing machine ICS+ operation and performance in "Metos" Lithuania and Finland Centers.
	Trade fairs	Seminars and presentations with demonstrations of "Metos" conveyor dishwashing machine ICS+ operation and performance in specialized trade fairs, E.g. organized by "LITEXPO" palace, "Lietuvos vireju asociacija" and etc. In the same time slide show demonstration of running and total cost savings.
	Sponsoring events	Sponsoring the events related with food and catering industries. "Metos" conveyor dishwashing machine ICS+ and other equipment borrowing for same events.
	Internet	Special articles about "Metos" conveyor dishwashing machine ICS+ environmental friendliness and energy savings in web page and other links related with food industry. All other possibilities to promote a product which is not so expensive.

Because company operate in B2B market, which differs from customer market it is very important to take in to account that some advertising methods can't reach "Metos" customers or can reach only with big expenses. The promotional program for "Metos ICS+" conveyor dishwashing machine is created (Table 16) considering promotion categories and technique analysis (Table 15). Promotional program involve only most effective promotion methods and techniques. This helps to gain maximum benefit from promotional program with minimum expenses. Emphasize on good quality, improved features and energy savings calculations will help to convince customers to value and to buy product.

"Metos" are always seeking better ways to grow profits and maximize revenue from the sale of products. Revenue allows the company to maintain viability, invest in new product development and improve its workforce; all in an effort to acquire additional market share and become a leader in its respective industry. Technology management in a company "Metos" (development, technical activities and production) is completely connected with marketing management. Engineering cannot be taken only as a technical activity, but as a set of human and technological activities securing the efficiency of technical solution and profitability in the company business. Marketing management influences total "Metos" efficiency and profitability. The goal of marketing is to satisfy the needs of "Metos" potential customer. On the basis of marketing, what we already analysed in this chapter, can be decided what products and services can be insured, which goods for company "Metos" are useful to produce and which is useful to stop. It has no sense to produce products without any interest of customers. To avoid a conflict between the "Metos" and customer, the marketing activity must cause effectively and responsibly. "Metos" conveyor dishwasher was decided to improve, because product depends to a 2^{nd} most profitable product group and it is in the growth stage of PLC.

Production conception is that the customer needs product with low price and widely reachable. "Metos" product conception is focused on the quality of the product. Marketing conception depends on effective and efficient satisfaction of the customer's needs. To reach the economic and marketing aims on final market, the marketing management of the company "Metos" uses marketing mix. "Metos ICS+" dishwashing machine marketing program was created not considering technology management, and advantages from pursued differentiation technological strategy in the company. In this chapter of theses we analysed already existing marketing mix for "Metos ICS+" conveyor dishwashing machine and improved it considering the company "Metos" technological strategy.

As we already sow from this chapter studies the main tool of marketing mix is the price of the "Metos ICS+" conveyor dishwashing machine, which must be adequate to the value of the product, or the customer will turn to the competitors. In this chapter we did economical calculations, which shows the real savings and "Metos ICS+" benefit for customers. These calculations should help for company's sales peoples to sell a product with pursued skimming pricing strategy.

Another main tool of marketing mix is place. Company create such activities, which make the "Metos ICS+" widely easy reachable. "Metos" company try to follow exclusive distribution strategy. Company use only representative owned by company in a given area. With this chosen distribution strategy company ensure complete control on brand and best quality services, what fits with technological and overall company's business strategy.

The fourth tool of marketing mix is promotion. The company "Metos" makes an effort so that the customer could get knowledge about the "Metos ICS+" conveyor dishwashing machine and it tries to force the customer to buy it. The promotional program for "Metos ICS+" dishwasher machine is quite abandoned. Obsolete promotional program is still used, without emphasize of improved quality and product features and need to be renewed. Considering technological, brand and overall business strategy in this chapter we improved promotion program for "Metos ICS+" conveyor dishwashing machine. Emphasize on good quality, improved features and energy savings calculations in promotional program will help to convince customers to value and to buy product.

CONCLUSIONS

From the final work researches we clearly understood that the technology management today plays crucial role in industrial enterprises competitiveness. The right pursued technological strategy brings the sources for company's competitive advantage, what enables company to survive and to grow. But it doesn't mean that for company's successful business enough only to have a good technological strategy. To reach company's goals with a product on the final market company must to have a good marketing program. To utilize technological strategy effectively, product marketing mix must be created, considering advantages provided from pursued technological strategy. All decisions makers must understand links between company's technological strategy and product marketing mix very well. In other way company can't gain the maximum benefit form pursued technological strategy, what's doing the job without the essence. The product life cycle concept plays very important role in technology management, competitiveness security as well as in marketing mix strategy planning.

In this final work is analysed JSC "Metos" technology management and pursued technological strategy role in the company's competitiveness. From technological strategy analysis we obviously can see that company try to follow differentiation technological strategy. Thus, to sustain competitive advantage company "Metos":

- Try to be the most customers' oriented company offering innovative products, complete value adding solutions and services to support the customer's business and processes.
- To achieve the goal to be No. 1 brand "Metos" focusing resources and capabilities in the area of R&D. "Metos" concentrate efforts in product improvement, development and continuously steering various reform initiatives to secure competitiveness.

The sources for competitive advantage, from pursued technological differentiation strategy in company "Metos" are:

- Differentiation from positioning towards competition provides the value which is based on features that have real value for the customer. This in turn gives leverage to premium pricing policies as the perceived power in the industrial chain increase through pull-demand from the end-user side.
- Increasing "Metos" customer loyalty decreases pressure on price, acting as a buffer against competitive actions.
- New products can be introduced under the umbrella of well-established company "Metos" actions.
- A previous mainly transaction-oriented, buyer-seller relationship becomes more institutionalized due to more complicated product offering. Increased co-operation in the form of marketing support and technical co-operation vis-à-vis the end-user is required. The focus of industrial marketer shifts from reactive selling to CRM.

As we find out, technology in the company is a strategic factor ranking along side financial, market, organizational and production factors in determining the future of "Metos" business. From competition analysis we saw that in the company's "Metos" target market operates the main 5 competitors, where 4 of them try to follow cost leadership strategy. This leads to reduced profit and provoke a routine price war. From company's customers analysis we observed that in the market are also customers who seek products with high quality and are less concerned with a price. From this we can acknowledge, that products differentiation through technology is the most obvious way for company 'Metos" to sustain competitive advantage in the market. And the company's R&D efforts are the key to this.

"Metos" product development strategy must take into account each product features and values preferred by customers. A lot of surveys in company "Metos" are used to understand customers and to forecast preferences in the future. In the thesis is suggested survey, where the data must be collected from product managers, which better than other employees in company know about particular product customers' values and preferences. This survey would be very useful for R&D process, because product managers very good know about particular product and can be more objective than some customers.

As we analysed, because the conveyor dishwashing machine depends to a second most profitable product group in the company and is in the growth stage, it obligates company to continuously product development and improvement. One of the newest company's products, "Metos ICS+" conveyor dishwashing machine has been developed to increase the energy efficiency of conveyor dishwashing machines for customers in professional kitchens. For company "Metos' this innovative product together with other products is the way to sustain and to strengthen company's competitive position.

The situation in the company shows, that technology management in the company "Metos" is completely connected with marketing management. Engineering cannot be taken only as a technical activity, but as a set of human and technological activities securing the efficiency of "Metos" technical solution and profitability. Marketing management influences the total company "Metos" efficiency and profitability. To reach the economic and marketing aims on final market, the management of the company uses marketing mix. It can be argued that there were some imperfections in already existing marketing program. The marketing program is abandoned and was created not considered the company's technological strategy. I suggest to improve "Metos ICS+" conveyor dishwashing machine marketing program considering technological company's strategy:

1. Company "Metos ICS+" conveyor dishwashing machine is priced pursued skimming strategy. Improved dishwashing machine is priced high to cover R&D expenses in shorter term and to make optimum profit. Some employees' claims that lower price can help to increase "Metos ICS+" conveyor dishwasher sales. I think pricing strategy is chosen right, because primary aim of product

differentiation is to reduce price competition. To convince customers to buy the product, I suggest for potential customer to make economical calculations. The calculations will help to feel a real savings and benefit which a customer will get pursued “Metos ICS+” conveyor dishwashing machine.

2. “Metos” company try to follow exclusive distribution strategy. “Metos ICS+” conveyor dishwashing machine will be moved through the same distribution channels, because the target market is the same. According researches of this final work, considering the PLC stages in the growth stage is recommended intensive distribution channels. I think that distribution strategy is chosen right and we don’t need to improve it. Company takes in to account technological, brand and overall company’s strategy when decide on distribution channels. It’s very important for company to have complete control on brand and best quality services.
3. The promotional program for “Metos ICS+” dishwasher machine is quite abandoned. Obsolete promotional program is still used, without emphasize of improved quality, product features and need to be renewed. Improved quality, features and savings of “Metos ICS+” conveyor dishwashing machine must be emphasized in all product promotional program. For the product is suggested new promotional program. Emphasize on good quality, improved features and energy savings calculations will help to convince customers to value and to buy the product.

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MORE QUESTIONS TO THE DISHWASHER R&D PROJECT

1. Is there any need for improved conveyor dishwasher machine in your country/market area?

   ---

2. Can we achieve new customer segments if we have improved conveyor dishwashing machine which saves energy, in our assortment?

   ---

3. What competitors can be seen in your market in the category of conveyor dishwashing machines?

   ---

4. For what kind of dishes (glass, plates and etc.) more are used nowadays?

   ---

5. What is/are the main customer segment/s for conveyor dishwashing machine?

   ---

6. Please estimate the share of sales volume in percentage in your market. Devide the 100% sales volume of dishwashing machines to the following two groups:

   Cupola dishwasher: ---------- %
   Conveyor dishwasher: ---------- %

   TOTAL ---------- 100%