

UNIVERSITY OF LJUBLJANA

FACULTY OF ECONOMICS

DIPLOMA PAPER

**PRICING DECISIONS FOR HIGH-
TEHNOLOGY PRODUCTS AND SERVICES**

STATEMENT

Student Marko Kelc, hereby declare that I am the author of this diploma paper which I have written under supervision of assistant professor PhD. Marko Pahor and I authorize the text to be published on the univesity's website.

In Ljubljana, 28.5.2008

Signature_____

CONTENT

INTRODUCTION	1
1 DEFINITION OF HIGH TECHNOLOGY	2
1.1 Government definition of High Technology	2
1.2 Defining High Technology in terms of common characteristics	4
1.2.1 Market uncertainty.....	4
1.2.2 Technological uncertainty	5
1.2.3 Competitive Volatility	5
2 THE TECHNOLOGY ADOPTION LIFE-CYCLE	6
2.1 The Early market	6
2.2 The Chasm.....	7
2.3 The Bowling Alley.....	7
2.4 The Tornado.....	8
2.5 Main Street	9
2.6 Total Assimilation.....	9
3 UNDERSTANDING HIGH-TECH CUSTOMERS.....	9
3.1 Customer purchase decision	9
3.1.1 Problem recognition	9
3.1.2 Information search	10
3.1.3 Evaluate Alternatives	10
3.1.3.1 Relative advantage.....	11
3.1.3.2 Compatibility	11
3.1.3.3 Complexity.....	12
3.1.3.4 Trialability.....	13
3.1.3.5 Ability to communicate product benefits	13
3.1.3.6 Observability	13
3.1.4 Purchase Decision.....	14
3.1.5 Post-Purchase Evaluation.....	14
4 THE HIGH-TECH PRICING	15
4.1 The high-tech pricing environment	15
4.2 The Three Cs of Pricing	17
4.2.1 Costs	17
4.2.2 Competition	18
4.2.3 Customers.....	18
4.3 Customer-oriented pricing	21
4.3.1 A firm must understand exactly how the customer will use its products.....	21
4.3.2 A firm must focus on the benefits customers receive from using its products.	22

4.3.3	A firm must calculate customer costs.....	22
4.3.4	Implications of customer-oriented pricing.....	23
4.3.5	Pricing of after-sales services	25
4.3.6	The effect of the Internet on pricing decision	26
5	THE TECHNOLOGY PARADOX.....	27
5.1	Solutions to the Technology (Pricing) Paradox	28
6	SmarTable.....	31
	CONCLUSION	33
	POVZETEK DIPLOMSKEGA DELA V SLOVENŠČINI.....	34
	REFERENCES.....	42
	SOURCES	44

INTRODUCTION

Making pricing decisions for high-technology products and innovations is not the same as it is for the more traditional products and services. High-technology companies have higher investments in R&D than traditional companies and the products' life cycle is shorter. On the other hand customers are uncertain and in doubt about how to use and obtain all the benefits of using brand new product.

This thesis is an attempt to introduce the basics of pricing decisions in high-tech markets to the Slovenian companies. Pricing in high-technology markets depends on several factors: the product's position in The Adoption Life Cycle, the high-technology market environment and its characteristics. Understanding customers' behaviour and decision making process makes pricing easier and more successful. Pricing consist of three parts: costs, competition and customers.

The thesis is based on the customer-oriented pricing. In customer-oriented pricing it is important for the sales department to understand how customers use their product, to focus on the benefits rather than the features customer receive, and to know how to calculate customer costs – how the customer trades off costs versus benefits before the purchase. If the sales department uses after-sales services, it will be able to put adequate prices on the products. Nowadays, the Internet effects finding information about different manufacturers, their costs and prices. In the high-technology markets marketers are confronted with a rapid pace of price declines called "The Technology paradox". As we can see there are many factors involved in making pricing decisions in high-technology markets.

1 DEFINITION OF HIGH TECHNOLOGY

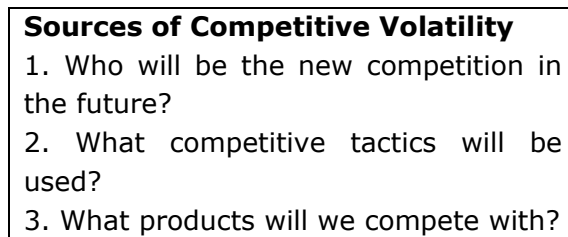
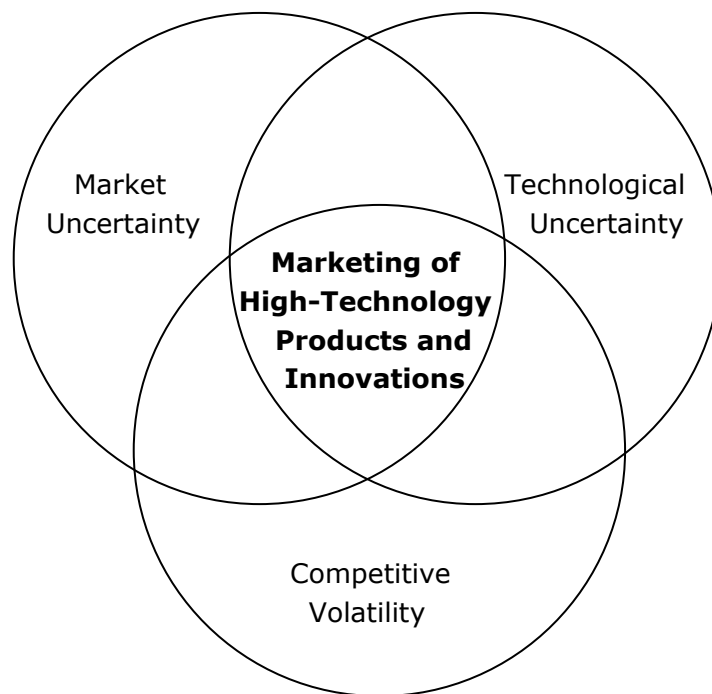
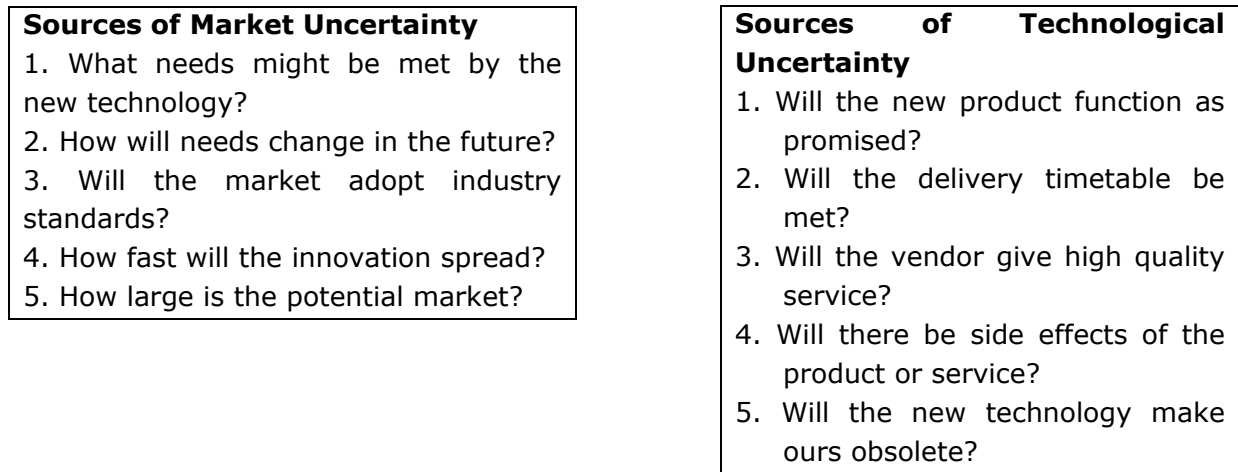
1.1 Government definition of High Technology

Most government definitions of high technology classify industries as high tech based on certain criteria such as the number of technical employees, the amount of research and development outlays, or the number of patents filed in a given industry (Hadlock, Hecker, Gannon, 1991, pp. 26-30).

According to Luker and Lyons (1997, pp. 12-25) definitions based on these specific criteria do have shortcomings. Some industries whose products are modified only incrementally (e.g., cigarettes) and which new technological breakthroughs have not been seen in years. The classification may include industries in which most output is standardized and produced in large volume by relatively unskilled workers. These industries have a proportion of scientific or engineering workers high enough to make them R&D intensive or moderate, but the bulk of this talent may be used to alter incrementally the characteristics of established products in slowly growing, advertised-intensive markets. Moreover, this classification may exclude the development of new products or process by skilled workers in an industry whose score on R&D employment does not qualify it for high-tech status. For example, in one R&D centre founded by the textile industry (generally not considered a high-tech industry), engineers and computer scientists are working to automate the design, cutting, and fitting of garments for retail customers. This project uses the latest in laser and computer technology (Lipkin, 1996, pp. 316-317).

Finally, many low-cost manufactures of electronic computers now use mass-produced components assembled in highly routine settings with minimal engineering and scientific input. Even within the semiconductor industry, high volume chip manufacturing can involve high capital-to-labour ratios and relatively low scientific labour requirements (Luker, Lyons, 1997, pp. 12-25). Although such industries are generally classified as high tech, the innovations at this stage of the industry development may be fairly incremental (Mohr, Sengupta, Slater, 2005, p. 6).

Figure 1: Characterizing High-Tech Environments



Source: Mohr, Sengupta, Slater, 2005.

1.2 Defining High Technology in terms of common characteristics

Another view of high technology is based on common characteristics that all high technology industries share (Rowland, Kosnik, 1989, pp. 7-17), most notably, market uncertainty, technological uncertainty, and competitive volatility (Gardner, 1990, case 90-1706).

1.2.1 Market uncertainty

Market uncertainty refers to ambiguity about the type and extent of customer needs that can be satisfied by a particular technology (Rowland, Kosnik, 1987, case 9-588-012).

According to Mohr, Sengupta and Slater (2005, pp. 7-8) there are five sources of uncertainty:

- Market uncertainty arises; first and foremost, from consumer fear, uncertainty, and doubt about what needs or problems the new technology will address, as well as how well it will meet those needs. Anxiety about these factors means that customer may delay adopting new innovations, and need post-purchase reassurance and reinforcement to assuage any lingering doubt.
- Second, customer needs may change rapidly, and in an unpredictable fashion, in high-tech environments.
- Third, customer anxiety is perpetuated by the lack of a clear standard for new innovations in a market.
- Fourth, due in large part to the three factors, uncertainty exists among both consumers and manufacturers over how fast the innovation will spread.
- Finally, uncertainty over how fast the innovation will spread contributes to an inability for manufacturers to estimate the size of the market. Obviously, market forecasts are crucial for cash flow planning, production planning, and staffing. However, the other sources of market uncertainty contribute to very real possibility to error in forecasting.

1.2.2 Technological uncertainty

Technological uncertainty is “not knowing whether the technology - or the company providing it - can deliver on its promise to meet specific needs” (Rowland, Kosnik, 1989, pp. 7-17).

Five factors give rise to technological uncertainty (Mohr, Sengupta, Slater, 2005, p. 9):

- The first comes from questions about whether the new innovation will function as promised.
- The second source of technological uncertainty relates to the timetable for availability of the new product. In high-tech industries, product development commonly takes longer than expected, causing headaches for both customers and firms.
- Third, technological uncertainty arises from concerns about the supplier of the new technology.
- Fourth, the real concern over unanticipated consequences or side effects also creates technological uncertainty.
- Finally, in high-tech markets, technological uncertainty exists because one is never certain just how long the new technology will be viable-before an even newer development makes it obsolete. As a new technology is introduced, its performance capacity improves slowly and then, because of heavy R&D efforts, improves tremendously, before reaching its performance limits.

1.2.3 Competitive Volatility

A third characteristic that underlines high-tech markets is competitive volatility. Competitive volatility refers to changes in the competitive landscape: which firms are one’s competitors, their product offerings, the tools they use to compete. There are three sources of competitive volatility:

- First, uncertainty over which firms will be new competitors in the future makes it difficult for firms to understand high-tech markets. Indeed, the majority of the times, new technologies are commercialized by companies outside the threatened industry. These new players are viewed as disruptive and frequently dismissed by incumbents (Mohr, Sengupta, Slater, 2005, p. 10).

- Second, new competitors that come from outside existing industry boundaries often bring their own set of competitive tactics, tactics with which existing industry incumbents may be unfamiliar. However, these new players end up rewriting the rules of the game, so to speak, and changing the face of the industry for all players (Hamel, 1997, pp. 70-84).
- Third, new competition often arises as product form competition, or new ways to satisfy customer needs and problems. (Mohr, Sengupta, Slater, 2005, p. 10).

There are various ways to define and characterize high-tech industries and companies. On the other hand all high-tech companies have some characteristics in common; like market uncertainty, technological uncertainty and competitive volatility.

2 THE TECHNOLOGY ADOPTION LIFE-CYCLE

Vecchio (2000) states that the technology adoption life cycle can be visualized as a bell curve segmented by certain characteristics that must exist for the products to transition throughout each stage of the cycle. The bell curve consists of several phases: Innovators, Early Adopters, Bowling Alley, Tornado, and Main Street.

2.1 The Early market

According to Wiefels and Moore (2005, p. 14) early market is the gestation period of any discontinuous innovation, characterized by both excitement and uncertainty in the minds of both vendors and customers. This phase is under the sway of technology enthusiasts (also referred to as innovators) and visionaries (also referred to as early adopters).

Technology enthusiasts operate on the principle that a discontinuous innovation is, at its core, superior to what is currently available. Their motivation is thus to seek out such opportunities, explore them, and pronounce them fit or unfit for general consumption. Simply put, they are the first customers for anything truly new (Wiefels, Moore, 2005, p. 14).

Visionaries see discontinuous innovations for what they can be, particularly if they can be harnessed early to begin a new paradigm—one that visionaries can exploit to significant competitive advantage or leverage over that to which the market is now wedded. Given their numbers, visionaries provide the first real impetus to a fledgling market because their significant economic clout drives vendors to further commercialize their efforts. Visionaries also are the first group to extol the virtues of the innovation both in word (their vocal support) and in deed, by virtue of their considerable investment in the new way (Wiefels, Moore, 2005, p.15).

Taken together, technology enthusiasts and visionaries constitute the first or early market for discontinuous innovation. There are no other customers other than these two groups at this stage of the Technology Adoption Life-cycle (Wiefels, Moore, 2005, p. 15).

2.2 The Chasm

The Chasm is a pause of indeterminate length in market development, when the early market interest has waned and when there is no preordained or natural customer among the mainstream market for the discontinuous innovation, owing to its immaturity and lack of widespread deployment (Wiefels, Moore, 2005, p. 15).

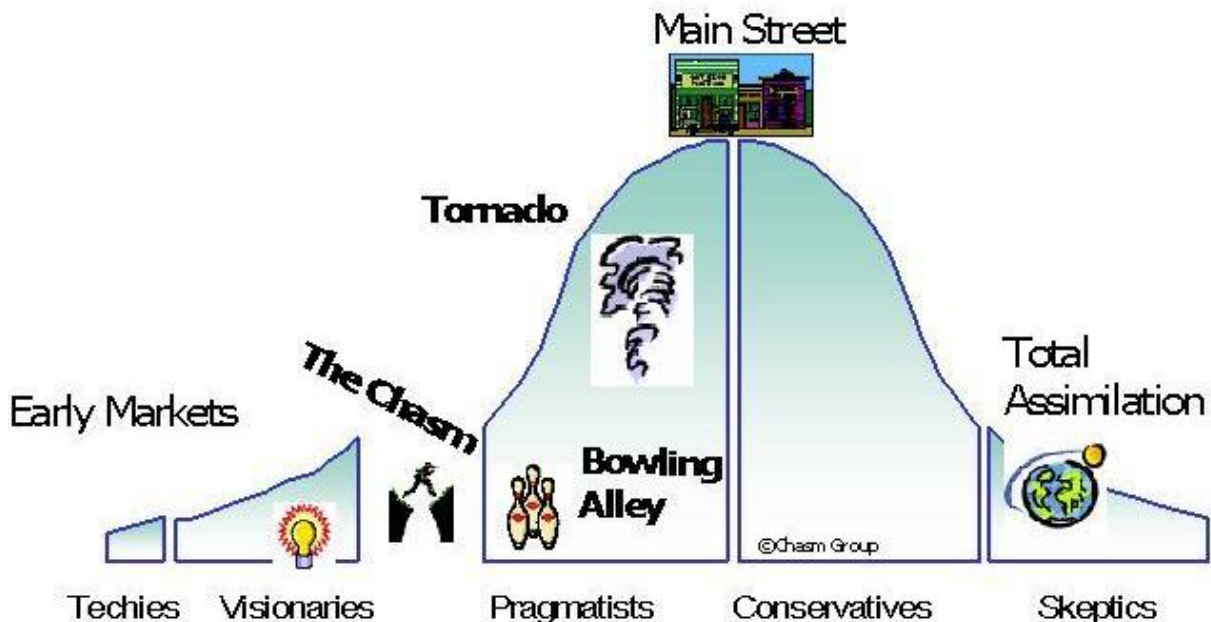
2.3 The Bowling Alley

Wiefels and Moore (2005, p. 15) are thinking that resumption of market development consisting of specific customer segments who are adopting ahead of general market adoption based on their desire to address specific problems, and on vendor's willingness to provide segment-specific solutions to such challenges.

This phase is driven by those pragmatists (early majority) who are willing to shed their natural aversion to discontinuity in order to achieve specific benefits no available from current paradigm or infrastructure. Pragmatists at this stage are interested in evolution, not revolution. They are interested in what the innovation does reliably and predictably rather than what it promises to do at some future point. They also require

demonstrable evidence that their early moves (at least for them) will pay off and that people they would typically reference-other pragmatists in similar situations-will also proceed, albeit cautiously, in this direction (Wiefels, Moore, 2005, p. 15).

Figure 2: The Technology Adoption Life-Cycle



Source: The Chasm Companion, 2005.

2.4 The Tornado

A period of market hyper-growth caused by pragmatists adopting en masse a new infrastructure that renders the previous paradigm obsolete. Remaining pragmatists now flood into the market. These customers are highly influenced by the market-leading solution and the company that sponsors it, and will tend to behave as a pack. Their behaviour is reinforced by third-party companies now embracing the market-leading solution further validating the pragmatists' decision to adopt an emerging value chain. The previously discontinuous innovation is now deemed safe and effective (Wiefels, Moore, 2005, pp. 15-16).

2.5 Main Street

Main Street is a period of relative stasis during which demand for and supply of the no-longer-new product are in relative equilibrium. Thus, the market development challenge is to provide aftermarket offers that extend the paradigm now adopted. Conservatives (the late majority) now extend this market development phase. This group does not embrace the promise of competitive advantage but rather is concerned about being left behind-being put at competitive disadvantage. Conservatives embrace Main Street markets, as they are price and option sensitive and feel that by waiting for this phase in the cycle, they can attain the benefits of the new way without unduly subjecting themselves to any remaining risks that may still lurk in the wings. Sceptics (laggards) also begin to take notice of the emerging status quo but will continue to prefer that their purchases be completely risk free. They are not an attractive market for high-tech vendors and may decry the emergence of new markets as just another high-tech marketing scam perpetrated. On those who neither need nor want anything remotely thought of as new (Wiefels, Moore, 2005, p. 16).

2.6 Total Assimilation

Total Assimilation is a final period reflecting the end of the Technology Adoption Life Cycle-but not the end of the product category. Final adopters, the sceptics, now adopt the new paradigm unconsciously or as a matter of course, but may do so in ways whereby the original innovation is not apparent or is obtained as a service (Wiefels, Moore, 2005, p. 16).

3 UNDERSTANDING HIGH-TECH CUSTOMERS

3.1 Customer purchase decision

3.1.1 Problem recognition

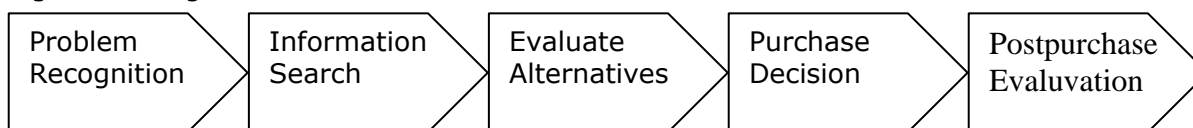
Purchase process begins when the buyer recognizes a need, be it a problem or an opportunity. Need recognition can be stimulated by internal

or external stimuli. An example of an internal stimulus is recognition that a bottleneck exists in the order fulfillment process. Advertising might provide an external stimulus, as might insight provided by using the lead user process of from customer complaints (Mohr, Sengupta, Slater, 2005, p. 172).

3.1.2 Information search

Mohr, Sengupta and Slater (2005, pp. 172-173) are thinking that at this stage the buyer actively searches for information about how to solve the problem. This often takes the form in identification of alternatives for solving the problem. The buyer may utilize personal sources such friends or colleagues, commercial sources such as advertising or a vendor, public sources such as Internet or reviews in trade publications, or experiential sources such as examining the product. Particularly for distributors or retailers of high-tech products in making decisions about which products to carry, trade shows are important sources of information about new products and cutting-edge technologies. The amount of information required varies by product category and customer type.

Figure 3: Stages in the Purchase Process



Source: Mohr, Sengupta, Slater, 2005.

3.1.3 Evaluate Alternatives

Evaluation of alternatives for high-tech products and innovations follows Everett Rogers' framework for evaluation and adoption of innovations (Rogers, 1983, Free Press). From customer's perspective, making the decision to adopt a new technology is a high-risk, anxiety-provoking one. The sources of market and technological uncertainty mean that customers are worried about making bad decision, switching costs involved, training needs, and so forth. Understanding the factors that affect customers' purchase decision is vital. The critical characteristics that influence a customers' potential adoption of a new innovation are shown in Table 1. High-tech marketers must be able to articulate their vision of how their

product fares on each of these factors (Mohr, Sengupta, Slater, 2005, p. 173).

3.1.3.1 Relative advantage

Relative advantage refers to the benefits of adopting the new technology compared to the costs. In addition to the price of buying the new technology, the ambiguity of high-tech products can lead to emotional worry, a type of psychic cost. The customer will have fear, uncertainty, and doubt about whether the technology will deliver the promised benefits and the customer will have the skills and capabilities to realize those benefits (Mohr, Sengupta, Slater, 2005, p. 173).

According to Mohr, Sengupta and Slater (2005, p. 173) many high-tech entrepreneurs believe that their invention is Holy Grail, a better mousetrap, and the next best thing to slice bread, all rolled into one. However, the factor of relative advantage suggests that it is not sufficient for the inventor to believe that he or she truly has a better product; the improvements must be readily perceived by the customer and be worth the monetary and other costs of adoption.

As an example, some question whether high-definition TV (HDTV) really provides a perceived relative advantage to the large majority of consumers. Initially, the relative advantage was discussed in terms of the higher resolution that the digital format provided. The cost of initial set was in the \$2,000 to \$3,000 range. Consumers asked themselves whether they needed to see their favourite shows in higher resolution for such a high price tag, relative to standard sets. When this concern was coupled with the reality that TV broadcasters were sending only a portion of their programming in the new digital format, the relative advantage to consumers just wasn't apparent (Mohr, Sengupta, Slater, 2005, p. 173).

3.1.3.2 Compatibility

According to Mohr, Sengupta and Slater (2005, p. 174) compatibility refers to the extent to which customers will have to learn new behaviours to adopt and use the innovation. Compatibility with existing ways of doing things, and with cultural norms, can hasten adoption and diffusion of

innovation. Products that are incompatible with standard ways of doing things require more time and getting up to speed require more education from marketer. Especially in high-tech markets, issues of compatibility arise in terms of offering interfaces to legacy systems and in terms of compatibility with complementary products.

Table 1: Six Factors Affecting Customer Purchase Decisions

1. Relative Advantage	The benefits of adopting the new technology compared to the costs.
2. Compatibility	The extent to which adopting and using the innovation is based on existing ways of doing things and standard cultural norms.
3. Complexity	How difficult the new product is to use.
4. Trialability	The extent to which a new product can be tried on a limited basis.
5. Ability to Communicate Product Benefits	The ease and clarity with which the benefits of owning and using the new product can be communicated to prospective customers.
6. Observability	How observable the benefits are to the consumer using the new products, and how easily other customers can observe the benefits being received by customer who has already adopted the product.

Source: Mohr, Sengupta, Slater, 2005.

3.1.3.3 Complexity

Complexity refers to how difficult the new product is to use. Very complex products have slower adoption and diffusion rates compared to those that are less complex. Obviously, many new high-tech products are complex. Marketers should ask themselves how they can simplify their products and whether the level of complexity is absolutely necessary, in terms of customer requirements (Mohr, Sengupta, Slater, 2005, p. 174).

3.1.3.4 Trialability

Trial-ability is the extent to which a new product can be tried on a limited basis. Trial-ability reduces the risk that potential buyers perceive. This is a major issue since many new products or innovations are perceived as being complex and incompatible with older technologies. New products that can either be tried for a limited time without a commitment or that can be tried on a modular basis are generally adopted more rapidly than products that require irrevocable purchase or that are not divisible (Mohr, Sengupta, Slater, 2005, p. 174).

3.1.3.5 Ability to communicate product benefits

Wildstrom (1999, p. 23) states that the likelihood of customer purchase is influenced by the ease with which the product benefits can be communicated to prospective customers. There are two issues pertinent to high-tech marketers here. First, for many high-tech products, the benefits are difficult to convey to customers. Second, many high-tech marketers tend to talk in technical terms when communicating about product. Such communication typically focuses on product features and specifications, rather than real benefit the customer will receive.

3.1.3.6 Observability

According to Mohr, Sengupta and Slater (2005, pp. 174-175) observability refers to, first, how observable the benefits are to the consumer using the new product and, second, how easily other customers can observe the benefits being received by customer who has already adopted the product. For products that are used in public manner and for which the benefits are clearly observable, the likelihood of purchase is greater. These factors must be assessed by inventors of new products in order to understand just how quickly their product might take off in the marketplace. Although the factors sound deceptively simple, they pose crucial barriers that high-tech marketers must overcome. They must educate buyers to overcome the "FUD" factor (fear, uncertainty, and doubt) and highlight benefits. Because breakthrough products don't connect easily with buyers' existing expectations, traditional approaches to marketing-which assume that customers understand the usefulness of the product and have the know-

how to evaluate its features-are often insufficient. Insight about the factors can be gained by involving customers in the new-product development process and by involving innovative customers who might be early adopters in evaluating new-product ideas. If the new idea does fly with innovators, it still doesn't guarantee success. However, without excited innovators, a new product rarely survives.

3.1.4 Purchase Decision

During evaluation stage, the buyer forms opinions about the desirability of different alternatives. At the purchase stage, the buyer reaches agreement with the selected seller on the terms of purchase including: scope of the offering, price, terms of payment, and delivery (Mohr, Sengupta, Slater, 2005, p. 175).

3.1.5 Post-Purchase Evaluation

At this stage, the buyer assesses how well the product has lived up to its potential. Issues such as the following arise for the customer:

- Was I able to successfully learn how to use new technology?
- Did the technology deliver the promised benefits?
- Were there hidden costs to using the new product? (Mohr, Sengupta, Slater, 2005, p. 175).

Effective marketing strategies can be developed only if companies have a good understanding of how and why customers decide to buy high-technology products and services. If there is an early market for a product, first buyers-innovators are usually not the typical customers. The majority of the potential buyers needs to be taken into consideration instead and the manufacturer should not let the information from within the company mislead him.

4 THE HIGH-TECH PRICING

4.1 The high-tech pricing environment

What forces impinge on high-tech pricing decisions? As shown in Figure 4, the forces are varied and strong. Many high-tech firms might find it desirable to price at a high level, in order to recoup investment in R&D and to signal high product quality. However, many factors conspire to push prices down (Mohr, Sengupta, Slater, 2005, p. 288).

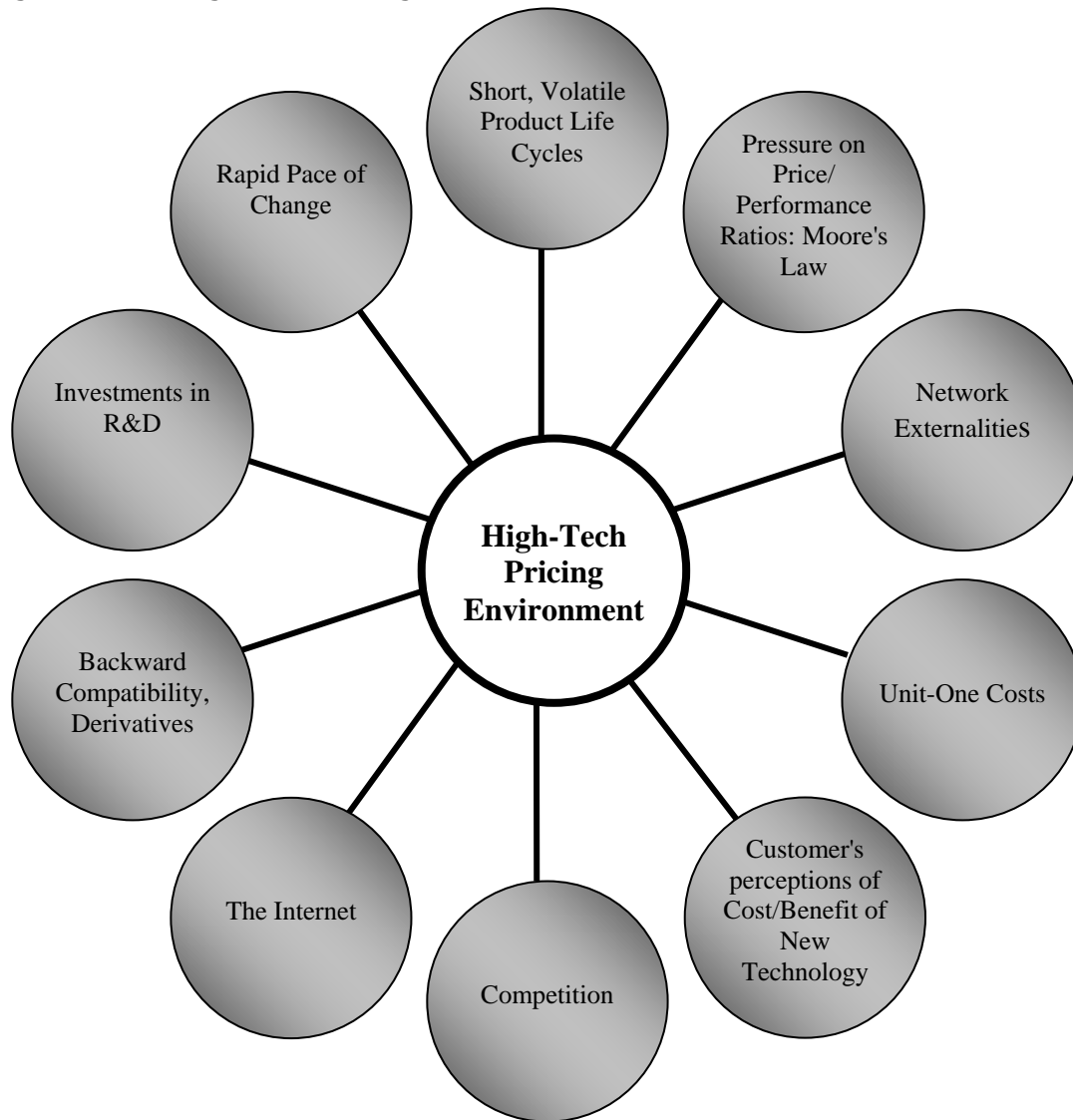
According to Mohr, Sengupta and Slater (2005, pp. 288-289) high-tech firms face an environment characterized by ever-shortening product life cycle, with the inevitable rapid pace of change and potential obsolescence of products. Moore's Law operates unforgiving: Every eighteen months or so, improvements in technology double product performance at no increase in price. Stated a different way, every eighteen months or so, improvements in technology cut prices in half for the same level of performance. So introduction of product versions with better price/performance ratios are given, that creates downward pressure on prices.

Moreover, network externalities and unit-one costs operate in the market. Recall that network externalities exist when the value of the product increases as more users adopt it; examples include the telephone, portals on the Internet, and so forth. Unit-one costs refer to the situation in which the cost of producing the first unit is very high relative to the costs of reproduction for subsequent units. For example, the costs of pressing and distributing a CD-ROM are trivial compared to the cost of hiring programmers and specialists to develop the content recorded on it. Both of these factors create pressure to acquire a critical mass of users through lower price structures (Smith et al., 1999, pp.637-649).

Furthermore, customer perceptions of the cost/benefit of the new technology affect pricing strategy. Customer anxiety may cause delays in adoption. For example, as firms introduce one new-and improved version after another, consumers may postpone purchase in the hope that prices eventually will come down and performance will improve substantially (Dhebar, 1996, pp. 37-49). For example, the initially slow adoption of broadband Internet service in the United States was explained, in part, by its high price. In such situation, marketers may need to lower the prices of

newer technologies aggressively to reduce possible switching costs, to offer special deals for upgrades, or to entice customers switching from a competing application (Smith et al., 1999, pp. 637-649).

Figure 4: The High-Tech Pricing environment



Source: Mohr, Sengupta, Slater, 2005.

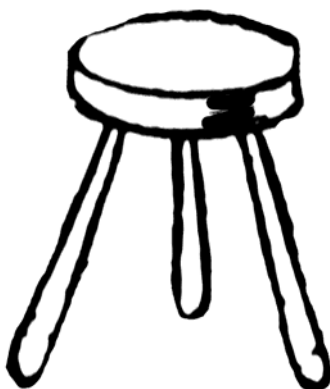
The effect of customer anxiety on purchase is further complicated by the upgrading considerations. Customer's perceptions of the performance gap between the old and new generations relative to the cost to upgrade have a strong influence on purchase behaviour. Because of this anxiety, marketers may have to lower prices for future generations to encourage upgrades (Mohr, Sengupta, Slater, 2005, p. 289).

Other complicating factors include the fact that high-tech firms must ward off competitors. Moreover, the Internet has allowed both consumers and organizational customers the ability to compare prices and negotiate for lower prices to a much greater degree than in past. Issues of backward compatibility (with older version of the product), support for existing products, changing operating standards, pricing for product derivatives, and so forth, all must be considered in pricing strategy (Mohr, Sengupta, Slater, 2005, p. 288).

4.2 The Three Cs of Pricing

The three Cs of pricing - costs, competition, and customers - are analogous to a three-legged stool, shown in Figure 5. Stool with only two legs are unbalanced and likely to topple over. Similarly, setting price on the basis of considering only one or two of the three Cs results in an unstable situation. Solid pricing strategy must be based on a systematic consideration of all three factors (Mohr, Sengupta, Slater, 2005, pp. 289-290).

Figure 5: The 3 Cs of Pricing



Costs Competition Customers

Source: Mohr, Sengupta, Slater, 2005.

4.2.1 Costs

Mohr, Sengupta and Slater (2005, p. 290) stated that costs provide a floor, generally below which marketers ought not to price. Companies that position on a low-price basis should not do so unless they have a strong,

non-imitable cost advantage in the industry that is unlikely to disappear with the future generations of technology. For example, a cost advantage based on economies of scale arising from large volume sales based on existing technology may not translate to a cost advantage when a new generation of technology comes down the pike.

A firm that bases prices primarily on its own costs structure often fails to recognize the impact that market factors have on profitability. Overlooking the impact of the market on pricing and profitability can be a fatal mistake in high-tech markets, in which market considerations are so important (Mohr, Sengupta, Slater, 2005, p. 290).

4.2.2 Competition

Competition provides a benchmark against which to evaluate prices. A firm might let competitors set prices and then establish its price below, equal to, or above those of competitors, depending upon its position in the market. While Dell tries to position itself as the low price leader, Apple tries to differentiate itself with innovative products and premium pricing (Mohr, Sengupta, Slater, 2005, p. 290).

In the high-tech arena, a firm that introduces a radical innovation to the marketplace often (wrongly) believes that, because its innovation is so new, there is “no” competition. However, this belief is not necessarily the case from customer’s perspective. A customer can always choose not to adopt new technology, but to solve problems based on former solutions which provide the competitive benchmark for radical innovations (Martin, 1995, p. 122).

4.2.3 Customers

Customers’ perceptions of value provide a ceiling above which marketers should not price. Simply, customers balance the benefits of purchase against its costs. High-tech marketers often find it difficult to understand fully the customer’s perceptions of benefits and costs. The innovating firm may find the new technology so compelling, so sophisticated, or so “innovative,” that it assumes the benefits are obvious to users. Similarly,

the innovating firm may not fully appreciate the customer's perceptions and costs (Mohr, Sengupta, Slater, 2005, p. 290).

Product benefits might include the following (Shapiro, Jackson, 1978, pp. 119-127):

- **Functional benefits** (The utilitarian aspects that might be attractive to engineers or technology enthusiasts)
- **Operational benefits** (The product's reliability and durability, and the product's ability to increase efficiency for customers)
- **Financial benefits** (Credit terms, leasing options, and so on)
- **Personal benefits** (The psychosocial satisfaction from being an early adopter, purchasing a well-known brand to avoid risk, and being professionally rewarded for making good organizational buying decision)

The costs a customer perceives are similarly diverse and might include (Shapiro, Jackson, 1978, pp. 119-127):

- **Monetary costs** (The price paid, transportation and installation, and so forth)
- **Non-monetary** (The risk of product failure, risk of obsolescence, obsolescing of a prior piece of equipment or related product, risk of late delivery, switching costs and the like)

The total cost of ownership is one way to look at customers' costs; it reflects the total amount a customer expends in order to own and use a product or service. Total cost of ownership includes the price paid for the good (including financing fee), as well as delivery or installation costs, service costs to maintain and repair the good, power costs to run the equipment, supplies, and other operating costs over the life of the equipment. In 2002, the total cost of ownership of a corporate personal computer was estimated to be \$6,400 per year including hardware, software, installation, training, maintenance, infrastructure, and support (Orr, 2002). Using the total cost of ownership in pricing strategy can help a firm position its products relative to those of competitors. Showing that the total cost of ownership of a product is lower than the competitor's can be a compelling benefit to a customer – despite an initially higher outlay for the product (Mohr, Sengupta, Slater, 2005, p. 291).

According to Mohr, Sengupta and Slater (2005, p. 291) firms such as Microsoft use this approach when selling to corporate customers.

Microsoft's Systems Management Server 2003 (SMS) leverages the Internet to deliver business services to computers and its Operations Manager product is used to improve operations, enhance performance, and maximize system and application availability. The company claims that network managers who use SMS and Operations Manager experience reductions in operational costs of up to 33 percent over the cost of previous solutions, and improved manageability for Windows environments. The message to corporate purchasers is that even through some Microsoft's network solutions may have a higher initial outlay (in terms of the purchase price, or site license fee on a per-user basis), users can still see significant cost savings in the total costs of operating and maintaining the network.

The Linux operating system offers similar total-cost-of-ownership saving for customers. For example, Jeffrey Birnbaum, the managing director for computing at Morgan Stanley's Institutional Securities Division decided in 2003 to replace 4,000 high-powered servers running traditional software from Microsoft or Sun, with much cheaper machines running Linux (a free, open-source operating system). His projected five-year savings from the switch: \$100 million (Greene, 2003, pp. 78-86)! This value proposition is part of the reason that the market share of Linux (in the market of server operating systems) has grown from 0 percent in 2000, to 13.7 percent in 2003, and is expected to jump to 25.2 percent in 2006 (Mohr, Sengupta, Slater, 2005, p. 292).

Quentin (1999, p. 9) thinks that solid consideration of costs, competitors, and customers is vital in establishing a successful pricing strategy. Focusing on costs alone can be myopic and can cause problems. Similarly, focusing on competition can be hard in high-tech markets, when the competition for radical innovation might be the customer's current behaviour pattern. Both of the drawbacks in focusing solely on costs or competition point to the value in taking a customer perspective in pricing. Taking a customer perspective in pricing forces marketer to realize that the firm's costs to manufacture a product and its investments in R&D are relatively unimportant to the customer's perceived value. Moreover, the customer tends not to care about the firm's costs so much as his or her own costs in buying and using the product. Iridium, the satellite-based international wireless telephone service launched by Motorola and its partners in 1998 failed, in part, due to the telephone handset's price of \$3,000 each and a per minute charge in excess of \$3. At these prices, only

15,000 users signed on instead of the expected 500,000. The service later filed bankruptcy.

4.3 Customer-oriented pricing

4.3.1 A firm must understand exactly how the customer will use its products.

Customer-oriented pricing requires that a marketer completely understand how customers apply and use the products they buy from the firm. Each end use of a product may have a different cost/benefit analysis. For example, a customer who purchases a Quicken tax program to run a small business doing tax preparation and consulting would place a different value on the product than a person who purchases the same program to do his or her individual taxes. Because of the varying ways in which customers use product, marketers may need to segment on an end-use (usage occasion) basis (Shapiro, Jackson, 1978, pp. 119-127).

In business market, such end-use segments are referred to as vertical markets. The idea is to examine how different customers segments in different industries use a product and price accordingly. Because of the different requirements in their end-to-end (or total) solution, customers in different vertical markets evaluate costs and benefits of a specific product in terms of a complete usage system, and not just in terms of an isolated part of that system. For example, if a small business decides to use a Web-based solution for its business processes (e.g., customer relationship management, supply chain management, customer service and billing), it must also have an Internet service provider, a Web-hosting service, and technical support (whether in-house or outsourced). Evaluating the cost /benefits of, say, the Web-hosting service, really cannot be considered in isolation of the total value to be gained from the Web-based business process in the digital arena. Therefore, companies like IBM could charge higher fees for its Linux services being used in a corporate e-business environment, than in a public university setting (Shapiro, Jackson, 1978, pp. 119-127).

4.3.2 A firm must focus on the benefits customers receive from using its products.

Shapiro and Jackson (1978, pp. 119-127) stated that the various types of benefits a customer can obtain including functional, operational, financial, and personal benefits. In analyzing benefits, firms must not fall into trap of focusing on product features at the expense of benefits. Customers buy benefits, not features. High-tech firms often mistakenly stress the cool technical wizardry of their inventions and are hard pressed to identify the real benefits customers receive. Additionally, the benefits that the technical/development personnel think are compelling are often confusing or not clearly important to the customers. Focusing on customer needs is a good way to overcome this problem. For example, in marketing computers, advertisements frequently discuss terms such as megahertz, megabytes, pixel resolution, and so forth. Although customers might know that greater numbers on each of these categories are presumably better, they might not know what the "improved performance" really delivers. Speaking in terms of processing speed (less wait time for functions to be performed), greater storage capacity (for the ever-increasing size of software programs), and greater clarity of the screen can help customers understand what they are getting.

4.3.3 A firm must calculate customer costs.

Including product purchase, and other relevant costs including transportation, installation, maintenance, training, and non-monetary costs, and understand how a customer trades off costs versus benefits in the purchase decision. For example, in considering the purchase of a high-definition TV, typically priced upward of a couple thousand dollars, marketers have focused quite heavily on the aspect ratio and greater resolution of the picture. A customer-oriented perspective on pricing would ask (Shapiro, Jackson, 1978, pp. 119-127):

- How or why will customers be using the product?
- What are the tangible benefits a customer receives from the features of aspect ratio and greater resolution?
- What are the costs that a customer perceives, in addition to the purchase price?

Customers who buy the product to watch TV at home for personal enjoyment will likely assign different value to the attributes than sports bars and other businesses whose competitive advantage is wrapped around viewing programs. For at-home customers, the tangible benefits of greater resolution might not be all that clear (pun intended). In addition to the purchase-price outlay, customers might have to consider the costs of obsolescence of their existing TV sets, and the “cost” that not many programs are broadcast in digital format in the early stages of this product’s life cycle. Hence, in terms of trade-off of costs/benefits, many typical at-home customers may find it difficult to justify the high price tag (Shapiro, Jackson, 1978, pp. 119-127).

4.3.4 Implications of customer-oriented pricing

The implications of these steps in customer-oriented pricing should help marketers in following ways. First, this analysis helps marketers to realize that pricing considerations should not be made after a product is developed and ready for commercialization, but early in the design process. Treating price as a design variable helps the firm to understand the relevant cost/benefit trade-offs involved for the customer (Shapiro, Jackson, 1978, pp. 119-127). Recall that conjoint analysis is a useful tool in this regard. Many firms take a customer-oriented perspective on pricing early in design process, and then develop the product around the relevant price point. For example, Hewlett-Packard, in its initial foray into the digital photography market in the mid-1990s, had research showing that a \$1,000 price point was the maximums a consumer would be willing to pay for a scanner and printer for digital photography needs. As a result, HP worked its price analysis backward from the customer value point, through the retail channel, subtracting out the margin that retailers would take, ending with a target cost figure that HP had to meet in product design and manufacturing. It then did the sourcing and manufacturing around this target cost (Mohr, Sengupta, Slater, 2005, pp. 295-298).

Second, this analysis shows that different customers in different segments will value the same product differently. Prices must account for both the perceived value of the product to customers and the cost to serve a particular customer account. Understanding that different customers value the product differently, and that different customers require distinct levels of service, means that the profitability of different customer accounts can

vary widely – and differentially affect the profitability to the firm. Customer-oriented pricing requires that companies manage their customers based on profits, not just sales (Shapiro et al., 1987, pp. 101-108). High-tech firms must be attuned to the costs of serving customers and filling orders, which can vary significantly by customer, depending upon the sales support, design or applications engineering, and systems integration required. Costs to serve customers can include presales costs, production costs, distribution costs and post-sales service costs. Unfortunately, the price paid by a particular customer often does not correlate with costs to serve that customer (Mohr, Sengupta, Slater, 2005, p. 299).

With the adoption of activity-based costing practices and customer relationship management software (from companies like Siebel, SAP, Oracle, or PeopleSoft, to name a few), it is now possible for businesses to track profitability at the level of each individual customer (Cooper, Kaplan, 1991, pp. 130-136). This can provide more insights for pricing policy than segment-level profitability analysis. For example, based on study of customers of a U.S. high-tech corporate services provider, a U.S. mail-order company, a French retail food business, and German direct brokerage house, Reinartz and Kumar found that loyal customers can costs more to serve and pay lower prices than newer customers. If loyal customers turn out to be unprofitable, prices may need to be revised upward (Reinartz, Kumar, 2002, pp. 86-94).

This implication of a customer-oriented view of pricing (focusing not just on sales, but on profits) is consistent with reinforces the customer relationship management strategies and a key implication for pricing: Firms should track the profitability of different customer accounts (Mohr, Sengupta, Slater, 2005, p. 299).

Bishop (1999, pp. 50-61) states that in analyzing the profitability of customer accounts, one implication that can arise is that companies may actually decide not to serve some customers – unless there are mitigating reasons for doing so (e.g., the lifetime value of a particular account is likely to be positive, or ancillary products and services might be sold at a profitable level).

4.3.5 Pricing of after-sales services

Many manufacturers of durable high-tech products earn significant revenue from after-sales services. Services have the potential to provide higher margins and competitive differentiation to sellers. Pricing of services poses a unique challenge because the benefits are often intangible to customers and companies lack data on unit production costs. As a result, many companies default to pricing services contracts by intuition. Some use uniform pricing based on a fixed percentage of the sales price of the equipment. This technique is too simplistic, since service costs can vary by accessibility of the customer, age of equipment, usage, and operating conditions. At the other extreme, some companies have a bewildering array of special contract terms negotiated with each customer. This may be costly to negotiate and be perceived as unfair to customers. Technology companies, thus, can end up losing money on services (Mohr, Sengupta, Slater, 2005, pp. 299-300).

A better approach, and one that is consistent with the steps in customer-oriented pricing, is to price services based on careful segmentation of customer requirements. Customer needs for service usually include one or more of the following: technical support, training, maintenance, response times, parts coverage, after-hours availability, and add-on services. The McKinsey Consulting Company has found that most companies' service customers can be segmented into three categories (Bundschuh, Devzane, 2003):

- "Basic needs customers" want a standard level of services with basic inspections and periodic maintenance.
- "Risk avoiders" want to avoid big bills but don't care as much about response times.
- "hand-holders" need high levels of service, often with quick and reliable response times and are willing to pay for the privilege.

According to Mohr, Sengupta and Slater (2005, p. 300) there are the three types of service pricing approaches, which will vary for the three categories of customers, are fixed price contract, time and materials, and full coverage. On the basis of this segmentation, it makes sense to offer the basic needs customers a fixed-price, well-defined, limited service contract, while the hand holders should be happy to invest in a full-coverage contract. The risk avoiders' needs may be met best with a combination of fixed price plus time and materials add-on option. This type

of service pricing strategy, based on customer needs and provider costs, has a better chance of profitability than either the more simplistic or complicated strategies.

4.3.6 The effect of the Internet on pricing decision

Another factor that is exerting downward pressure on prices is the Internet. The Internet creates cost transparency, which allows buyers to more easily find information about manufacturers' costs and prices, providing them more leverage in making product choices. For example, through the Internet, customers are better armed with information about features and benefits. More knowledgeable customers know more about how to gauge value. The Internet makes a buyer's search more efficient. Reverse auctions, in which suppliers make lower and lower bids in order to "earn" the right to sell a manufacturer supplies for its business, allow customers to identify suppliers' price floors, or the lowest price at which they are willing to sell a product or service. Moreover, due to transparency of pricing information online, some believe that the Internet makes it more difficult for a firm to engage in different pricing strategies in different markets-something that was commonly done in international markets in the past. And the increasing frequency of low-priced or free offers on the Net makes customers more sensitive to prices. Price lining, or versioning, follows the practice of offering derivate products and services, at various price points to meet different customers' needs. For example, broadband Internet service is available at lower speed and price for residential customers and a higher speed and price for commercial customers. Alternatively, price bundling strategies, where a company offers two or more goods as a package at one price, can make it more difficult for buyers to discern a manufacturer's costs. Again, the bundling of broadband Internet service with cable TV or telephone service is a way to mitigate cost transparency. Probably, the optimal way to mitigate the Internet's downward pressure on price is through maintaining a steady stream of innovations that allow a firm to avoid price competition. For example, eBay's ongoing innovation in services such as alerts, fixed price purchase, and convenient electronic payments, gives customers a reason to pay higher prices (Sinha, 2000, pp. 3-8).

In contrast to the downward pressure on prices that the Internet exerts, some argue that the Internet and online marketing strategies can actually

afford companies the opportunity to charge higher prices (Koch, 2003, pp. 47-52). Smart pricing (or dynamic pricing) uses data on customer shopping habits to adjust prices real-time on the internet. This allows a company to identify customer preferences and gauge how sensitive certain customers might be to price differentials. Web pricing systems (based on sophisticated software and data analysis) go hand-in-hand with data-mining and one-to-one marketing techniques, that allow marketers to target individual customers geared to their profitability and volume (Keenan, 2003, pp. 62-67).

5 THE TECHNOLOGY PARADOX

Probably one of the most significant factors high-tech marketers face is the rapid pace of price declines. Competition is forcing down prices in products ranging from semi-conductor chips to finished personal computers; the pace of declines has reached 20 percent or more annually (Wysocki, 1998, p. 1). This situation requires huge gains in volume if a firm is to maintain sales revenues, let alone profitability. Falling prices can help a firm or an industry sell more units - some believe that demand for digital resources is almost infinitely elastic - and increasing volumes can allow for more price cuts (Gross, Coy, Port, 1995, pp. 76-84). But the cycle is spinning ever faster, and companies have to scramble to keep up (McDermott, 1999, p.1).

Known as the technology paradox, businesses can thrive at the very moment when their prices are falling the fastest-if they understand how to thrive in such an environment. At a minimum, the situation requires exponential growth in the marketplace, such that volume grows faster than prices decline. However, at its extreme, technology is virtually free, and companies cannot count on volume to provide profits when they are literally giving the products away, extremely low-price or even free offers are attractive to the late majority adopters who can be difficult to acquire. For example, for those who are still not online and don't have a PC, it will take a really good offer to get them to adopt. But the cost to obtain these sales has serious effect on the bottom line (Gross, Coy, Port, 1995, pp. 76-84).

5.1 Solutions to the Technology (Pricing) Paradox

One implication of the technology paradox is that high-tech companies must know how to keep costs falling faster than prices. Moreover, the question of how to be competitive when technology is free requires a whole new paradigm for profitability. Companies must redefine value in an economy driven by unit-one costs, in such an environment, there is no single set of rules, as value can be found in several solutions (Gross, Coy, Port, 1995, pp. 76-84). For example, some companies will thrive by charging a premium for their products (e.g., Intel and Microsoft). Others can make money in selling products like commodities (e.g., disk drives). But, in the middle, companies must be inventive with their pricing strategies, as the solutions in Table 2 suggest. As so eloquently stated in fortune magazine, "as lower prices undermine already crummy margins, anyone who wants to be top dog in computers must master some new tricks-and the initiatives have little to do with selling PCs" (Kirkpatrick, 1998, pp. 186-187).

Second, technology companies must make every effort to avoid getting stuck making commodity goods. Commodity markets compel companies to follow supply/demand dynamics, and pricing power dissolves altogether. For example, Lucent Technologies no longer makes telephone handsets, which had become a commodity; rather, it sells network solutions (McDermott, 1999, p.1). When products become near-commodities, firms must focus on giving customers something that provides value above and beyond the competition's offerings. This might include customization (e.g., the dell model), 24-hour technical support or maintenance agreements, or a strong brand name. Mass customization, or serving mass markets with products that are tailored to individual customers, can be a compelling source of competitive advantage and provides knowledge of individual customer tastes and preferences. Amazon.com has taken this strategy into the Internet world (Mohr, Sengupta, Slater, 2005, p. 301).

Third, firms must have agility and speed. If a firm can't get to market on time, it might have missed its chance for profitability, because the price point will have moved. Relatedly, engineers must focus less on the best possible solution and more on the best solution possible in the fastest time frame (Kirkpatrick, 1998, pp. 186-187). Efficient design and systems are probably less important in a market in which prices decline rapidly than getting the product to market quickly. Guy Kawasaki refers to this as rule

number 2 for revolutionaries: "Don't worry, be crappy." (Kawasaki, Moreno, 1999).

Table 2: Solutions to the Technology Paradox

Solutions to the Technology Paradox
1. Squeeze out cost inefficiencies.
2. Avoid commodity markets.
3. Have agility and speed in getting products to market.
4. Find new uses for products.
5. Develop long-term relationship with customers.

Source: Mohr, Sengupta, Slater, 2005.

Fourth, companies can strive to find new uses for their products. For example, Intel has actively been cultivating partnerships with a wide variety of companies, including toy companies, car companies, appliance manufactures, and so forth, to expand the markets and uses for its chips (Mohr, Sengupta, Slater, 2005, p. 301).

Fifth, rather than being found in selling hardware or software, a real source of value is found in developing long-term relationships with customers. When the cost of manufacturing one more unit is negligible (unit-one costs), the goal of the firm changes from making a high margin on each product sold to building relationship with customers. The telecommunications companies are recognizing this as they use sophisticated database marketing to sell customers their whole range of telecommunications services in one-stop shopping model including local, long distance, Internet services, wireless and mobile commerce ("m-commerce") solutions. Other companies are recognizing this as they move away from focusing on sales of hardware or software to providing ongoing services that are sustainable source of revenue-and competitive advantages. For example, IBM has steadily moved away from being a provider of computer equipment and software to a provider of information-technology-related services. Companies can justify extremely low product pricing, or at the extreme, giving away products for free, when it allows them to build strong customer relationships that establish the following (Mohr, Sengupta, Slater, 2005, pp. 301-302):

- *A market hold.* Establishing a market hold with a large volume of customers is a viable strategy when customer attention is the most

valuable commodity. Grabs for “mind share” are part of a high-tech, attention-driven economy, based on the scarcity of customer time. In an attention-based economy, the consumer’s attention is considered to be more valuable than the money paid for the product. Getting big fast, gathering enough consumer eyeballs, and acquiring knowledge about those consumers’ shopping habits are the goal. Because customer time is scarce, and because technology keeps getting more costly in terms of the time required to master it, firms can grab attention by making products easy to use, exciting, or both. Establishing a market hold with large volume of customers was one justification Amazon gave for its customer acquisition strategies. It strives to develop personalized knowledge of each individual’s tastes and preferences and then capitalize on that knowledge by being the provider of choice for related products and services.

- *An installed customer base that will buy additional products and services.* One form of establishing an installed customer base is known in traditional marketing as captive product pricing. The basic idea is that a firm can be highly profitable by giving away the base or foundation product and making money on the complementary goods required to make the product useful. For example, Nintendo charted a business model in which the game consoles would be given away to consumers at or below cost, in order to boost sales of its game software. Virtually all of Nintendo’s profits flow from sales and license fees, on the game software. Cell-phone companies subsidize the price of handsets and make money with monthly service bills. Another form of this strategy (establishing a customer base that will buy additional products) is to focus on the whole product, or the entire set of items needed by a customer for a smoothly functioning system. For example, Gateway Computers recognized that the personal computer is only the “enabler” of all the activities that go on around the box itself. And a typical 5 percent margin on a \$1,500 PC yields only \$75 in profit. So, Gateway made a major move to expand into marketing a whole product; it bundles software, maintenance, services, peripherals (printers and scanners), and Internet service. Customers can pay for this package over time with credit and can trade in for a new machine in the future.

6 SmarTable

The SmarTable idea was created in 2005 as a part of the futuristic kitchen concept by the Gorenje Design Centre. The basic idea consisted of the need to shorten the path between the refrigerator and the dining table in a family kitchen.

Figure 6: SmarTable



Source: Gorenje, d.d.

To make interiors change on the request of its host from an elegant table to a setting for breakfast, snacks, aperitifs or even a cold lunch or dinner or just any special treat with a surprise effect for business partners or family friends, Gorenje created the unique SmarTable – a table with the integrated self-service fridge which can be lifted via remote control. The cooler is built into the central part of the table. With the remote controlled electric-motor the glass shelves with cooled food on them are lifted or descended. The central part of the SmarTable, the cooler, has a “merry-go-round” function. This way the access to the food is easier in and

socializing around the table is ennobled. Even when the cooler is in the descended position the central upper table can be used as a turn-table and meals which are placed on it can be passed around by turning the middle part of the table. It is possible to block the rotating part as well as to design it in wood.

Figure 7: SmarTable



Source: Gorenje, d.d.

Pricing for SmarTable is customer-oriented. Gorenje knows exactly how customers will use it and what benefits they will receive from it. The price depends on different factors. SmarTable is positioned as a luxury item, associated with rarity and limited accessibility. For that kind of products it is obvious that price covers all cost (development, production, marketing, etc.) plus really large mark-up which depends on different markets. Each table is made separately and almost all are unique. Customers can choose different shapes and materials like all sorts of: Granit, wood and glass. Since each product is different so is the price.

The first prototype caught significant attention throughout Europe where it was presented. The concept of the futuristic kitchen was presented even in the life-style supplement of the Financial Times under the heading "How to Spend It?".

CONCLUSION

High-technology product and services are present in very unstable environment where the odds of success are especially low. Low odds are mainly due to factors like market uncertainty, technological uncertainty and competitive volatility. Therefore pricing decisions play an important role on the way to success.

Essential in creating successful pricing strategy is solid consideration of costs, competitors and customers. High-tech customers choose the product based on its value therefore a customer-oriented pricing is crucial. Typically, in customer-oriented pricing high-tech sales people understand how the customer will use the product or service and they set up an adequate price according to the customers' costs on using the product or service.

Every product has a certain life cycle. High-technology products and services typically have a very short life cycle in which prices decline rapidly. In high-technology markets costs should fall faster than prices. Companies have to squeeze out cost inefficiencies, avoid commodity markets and find new uses for products, etc. Sales department needs to adjust the prices depending on which stage of the life cycle the product is currently in. For example, prices set for the early buyers should be different from prices set for the late majority.

During the last couple of years the Internet played an important role in shortening the products' life cycle and because of that the customer-oriented pricing gained on its importance. On-line customers find the information about manufacturers' costs, prices and competition much easier. Successful sales people are setting prices according to the principle of a customer-oriented pricing.

POVZETEK DIPLOMSKEGA DELA V SLOVENŠČINI

Proces določanja cen za visokotehnološke izdelke in inovacije ne poteka enako kot pri tradicionalnih izdelkih in storitvah. Visokotehnološka podjetja veliko več investirajo v razvoj in raziskovanje kot tradicionalna podjetja, poleg tega pa je življenjski cikel izdelka krajši. Po drugi strani pa kupci niso prepričani kako naj najbolje izkoristijo prednosti novega izdelka.

Namen diplomskega dela je slovenskim podjetjem predstaviti proces določanja cen na visokotehnoloških tržiščih. Na določanje cen na teh tržiščih vplivajo različni dejavniki: v kateri fazi asimilacijskega cikla je izdelek, položaj visokotehnološkega trga in njegove značilnosti. Uspešnemu postavljanju cen pa pripomore tudi dobro poznavanje psihologije kupca. Cene se določajo na podlagi treh faktorjev: stroškov (kontov), konkurence in kupcev.

Diplomsko delo je osredotočena na vlogo kupca v tem procesu. Kadar pri določanju cen osrednjo vlogo igra kupec, mora prodajni oddelek dobro poznati potrebe kupcev ter se osredotočiti predvsem na prednosti izdelka in ne le na njegove značilnosti, saj je za kupca pomembno predvsem kakšne prednosti mu prinaša novi izdelek. Če prodajni oddelek ponuja post-prodajne storitve, mora tudi tem storitvam določiti sprejemljive cene. Kupci v zadnjem času vedno pogosteje iščejo informacije o prodajalcih in njihovi ponudbi ter ceni preko spleta. Na visokotehnoloških trgih se trgovci spopadajo z hitrim padanjem cen, gre za tako imenovani "tehnološki paradoks". Očitno je, da je pri določanju cen na visokotehnoloških trgih treba upoštevati mnogo dejavnikov.

DEFINICIJA VISOKE TEHNOLOGIJE

Večina uradnih definicij uvršča industrije med visokotehnološke glede na določene kriterije: število zaposlenih na tehničnih oddelkih, vlaganje v raziskovanje in razvoj, ali pa število izdanih patentov (Hadlock, Hecker, Gannon, 1991, str. 26-30).

Luker in Lyons (1997, str. 12-25) trdita, da so te definicije, ki slonijo na specifičnih kriterijih, pomanjkljive. Klasifikacija lahko zajame tudi

industrije, katerih proizvodnja je standardizirana in v kateri delajo večinoma relativno nekvalificirani delavci. Te industrije imajo zaposlen dovolj visok delež inženirjev in tehničnih delavcev, ki firmi lahko zagotovijo visok ali vsaj zmeren nivo raziskovalne in razvojne dejavnosti, vendar lahko ti talenti le postopno spreminjajo karakteristike že uveljavljenih izdelkov na progresivnem, oglaševalsko orientiranem trgu.

Drug pogled na visoko tehnologijo temelji na splošnih značilnostih, ki so skupne vsem visokotehnološkim industrijam (Rowland, Kosnik, 1989, str. 7-17), predvsem so to tržna negotovost, tehnološka negotovost in konkurenčna nestabilnost (Gardner, 1990, primer 90-1706):

- Tržna negotovost se nanaša na nejasnost vzorca in razsežnosti potreb kupcev, ki jih lahko zadovoljimo z določeno tehnologijo (Rowland, Kosnik, 1987, primer 9-588-012).
- Tehnološka negotovost pomeni, da "ne vemo, če lahko tehnologija – oz. ponudnik – dejansko zadovolji specifične potrebe, kot zagotavlja" (Rowland, Kosnik, 1989, str. 7-17).
- Tretja značilnost visokotehnoloških trgov pa je konkurenčna nestabilnost. Ta se nanaša na spremembe konkurenčnega trga; katera firma konkurira kateri, sama ponudba izdelkov in kako firme ohranjajo konkurenčnost (Hamel, 1997, str. 70-84).

ASIMILACIJSKI CIKEL TEHNOLOGIJE

Asimilacijski cikel tehnologije lahko upodobimo kot zvončasto krivuljo, ki jo na določene segmente razdelimo s pomočjo karakteristik, ki jih izdelek mora imeti, da lahko gre skozi vse faze cikla. Zvončasto krivuljo sestavlja več faz: inovatorji, prvi kupci, bowling steza, tornado in glavna ulica (Vecchio, 2000).

Slika 1: Asimilacijski cikel tehnologije

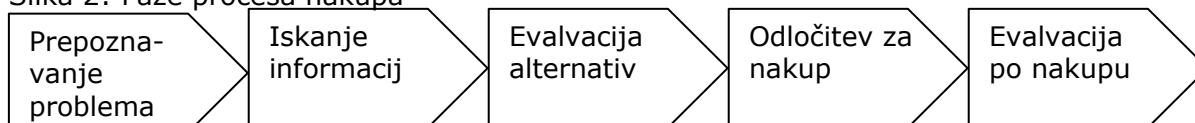


Vir: The Chasm Companion, 2005.

RAZUMETI KUPCA VISOKE TEHNOLOGIJE

Učinkovite marketinške strategije se lahko razvijejo le, če podjetja dejansko razumejo kako in zakaj se stranke odločajo za nakup visokotehnoloških izdelkov in storitev. Ko pride izdelek na trg, so njegovi prvi kupci t. i. kupci inovatorji, ki ponavadi niso tipične stranke. Podjetje mora upoštevati večino potencialnih kupcev in se ne sme zanašati na lastno poznavanje in uporabo tehnologije.

Slika 2: Faze procesa nakupa



Vir: Mohr, Sengupta, Slater, 2005.

DOLOČANJE CEN VISOKOTEHNOLOŠKIM IZDELKOM

Okolje določanja cen izdelkom visoke tehnologije

Visokotehnološke firme se soočajo z okoljem, ki ga zaznamujejo vedno krajši življenjski cikel izdelka, hiter tempo sprememb in potencialna

zastarelost izdelkov (Mohr, Sengupta in Slater, 2005, str. 288-289). Moorov zakon je neizprosen: na približno vsakih osemnajst mesecev se zaradi tehnološkega napredka zmogljivost izdelka podvoji, medtem ko cena ostane ista. Povedano drugače, vsakih osemnajst mesecev se na račun tehnološkega napredka cene izdelkov, katerih zmogljivost ostane enaka, razpolovijo. Torej različice izdelkov z boljšim razmerjem med ceno in zmogljivostjo pritiskajo na trgovce, da znižajo cene izdelkov.

Trije K-ji določanja cen

Tri K-je določanja cen – konte, konkurenco in kupce – lahko primerjamo s trinožnim stolom. Stoli z dvema nogama so nestabilni in se bodo zelo verjetno prekucnili. Podobno je pri določanju cen, če se upoštevata samo en ali dva K-ja, bo nastala precej nestabilna situacija. Zanesljiva strategija določanja cen mora biti osnovana na sistematičnem upoštevanju vseh treh faktorjev (Mohr, Sengupta, Slater, 2005, str. 289-290).

Konto

Konto oz. stroški predstavljajo tla, spodnjo mejo pod katero trgovci ne bi smeli postaviti cene. Podjetja, ki bazirajo na nizkih cenah, se lahko za tak pristop odločijo le, če imajo visoko, neulovljivo stroškovno prednost v industriji, ki verjetno ne bo izginila z naslednjo tehnološko generacijo. Na primer, stroškovna prednost, ki temelji na veliki prodaji izdelkov trenutne tehnologije, verjetno ne bo ohranila prednosti, ko bo na tržišču nova tehnološka generacija (Mohr, Sengupta, Slater, 2005, str. 290).

Konkurenca

Konkurenca predstavlja izhodišče za primerjanje cen. Podjetje se lahko odloči, da bo počakalo, da konkurenca prva postavi ceno, po kateri se bo ravnalo. Medtem ko se poskuša Dell uveljaviti kot ponudnik z nizkimi cenami, se skuša Apple od konkurence razlikovati po inovativnih izdelkih in temu primernih cenah (Mohr, Sengupta, Slater, 2005, str. 290).

Kupci

Kupčev pogled na vrednost izdelka predstavlja strop, ki ga trgovci pri postavljanju cen ne bi smeli preseči. Kupec pri nakupu vedno primerja med ceno in prednostjo uporabe izdelka. Prodajalci visoke tehnologije se

dostikrat znajdejo v zagati, ko skušajo razumeti kako razmišlja kupec. Za inovativno podjetje se morda zdijo prednosti njihovega novega izdelka povsem samoumevne, zato predvidevajo, da so te prednosti očitne tudi za kupca. Ali pa se zgodi, da inovativno podjetje ne upošteva dovolj resno mnenja kupcev in stroškov (Mohr, Sengupta, Slater, 2005, str. 290).

Določanje cen z vidika kupca

Za določanje cen z vidika kupca mora trgovec predvsem razumeti kako in za kaj bo kupec uporabljal njegov izdelek. Vsak izdelek in njegova namenskost ima lahko drugačno stroškovno-profitno analizo. Na primer, nekdo, ki ima računovodski servis in kupi nek program za izračun davkov, bo temu programu pripisal drugačno vrednost kot nekdo, ki kupi taisti program za lastne potrebe. Ker kupci izdelke uporabljajo na različne načine in v različne namene, bi bilo dobro, da se na to osredotočijo tudi trgovci (Shapiro, Jackson, 1978, str. 119-127).

Kupec lahko pri nakupu izdelka pridobi na več načinov: na funkcionalnem, operacijskem, finančnem in osebnem nivoju. Ko podjetje analizira prednosti nakupa/izdelka, mora paziti, da se ne ujame v past in se osredotoči le na lastnosti izdelka, namesto na prednosti, ki jih ta prinaša. Kajti kupci kupujejo prednosti, tisto kar se splača, ne lastnosti izdelka. Visokotehnološke firme pogosto naredijo napako, da poudarjajo visokotehno, tehnično plat svojih izumov, pri tem pa pozabijo na dejanske prednosti, ki jih izdelek prinaša kupcu. Poleg tega prednosti, ki jih v izdelkih vidijo člani razvojno-tehničnega tima, kupca velikokrat zmedejo ali pa se mu ne zdijo pomembne. Temu problemu se lahko izognemo, če pozorno prisluhnemo potrebam kupcev (Shapiro, Jackson, 1978, str. 119-127).

Kupec primerja vrednost nakupa, vključno s stroški transporta, instalacije, izobraževanja in vzdrževanja, s konkretnimi ugodnostmi, ki jih nakup prinaša. To je tisto kar bi morala upoštevati podjetja, ko tržijo svoje izdelke. Na primer: kupec se odloča za nabavo televizije visoke ločljivosti, katere cena se giblje od nekaj tisoč dolarjev navzgor in trgovec se je odločil, da se bo pri trženju izdelka osredotočil na velikost in boljšo resolucijo slike. Z vidika kupca, bi si trgovec postavil naslednja vprašanja (Shapiro, Jackson, 1978, str. 119-127):

- Kako ali zakaj bo kupec uporabljal ta izdelek?

- Katere konkretne prednosti prinašata kupcu velikost in boljša ločljivost slike?
- Katere stroške, poleg prodajne cene, bo kupec še upošteval?

TEHNOLOŠKI PARADOKS

Hitro padanje cen je verjetno najpomembnejši dejavnik s katerim se soočajo prodajalci visoke tehnologije. Konkurenčnost povzroča nižanje cen vse od delnih do končnih izdelkov – od čipa, do računalnika; cene padejo za 20% ali več na leto (Wysocki, 1998, str. 1). Podjetje mora izdelek prodati v ogromnih količinah, če hoče, da se mu povrnejo vsaj stroški izdelave, da ima dobiček pa je potrebno prodati še več izdelkov. Nizke cene pomagajo podjetjem prodati večje količine proizvodov – nekateri pravijo celo, da je potreba po digitalni tehnologiji neskončna – in povečana prodaja dopušča nova znižanja cen (Gross, Coy, Port, 1995, str. 76-84). Ampak ta krog se vrti vedno hitreje in podjetja morajo biti vedno hitrejša, če želijo obdržati korak s tem hitrim tempom (McDermott, 1999, str.1).

SmarTable

Idejo za SmarTable je leta 2005, kot del koncepta futuristične kuhinje, razvil Gorenje Design Centre. Ideja je odgovor na vprašanje kako skrajšati pot od hladilnika do kuhinjske mize.

Gorenje je SmarTable razvilo, da lahko gostitelj po svojih željah spreminja notranjo opremo svoje kuhinje; elegantna miza se prelevi v pogrinjek za zajtrk, prigrizek, aperitiv, hladno kosilo ali večerjo, lahko pa je preprosto poslastica in presenečenje za poslovne partnerje ali družinske prijatelje. SmarTable je miza z vgrajenim samopostrežnim hladilnikom, ki se dviga in spušča s pomočjo daljinskega upravljalnika. Hladilnik je vgrajen v osrednji del mize. Steklene police z ohlajeno hrano se dvigajo in spuščajo s pomočjo daljinsko vodenega električnega motorja. Hladilnik v osrednjem delu mize je vrtljiv, da gostje lažje dosežejo ponujeno hrano ali pijačo, druženje za mizo pa je dosti bolj omikano. Tudi kadar je hladilnik spušččen, je zgornja plošča mize še vedno vrtljiva, tako da si lahko gostje hrano podajajo z vrtenjem srednjega dela mize. Vrtljivi del pa se lahko tudi blokira in izdela iz lesa.

Mizi SmarTable je bila cena določena z vidika kupca. Gorenje ve kako bodo stranke izdelek uporabljale in kakšne prednosti prinaša njim. Cena je odvisna od različnih dejavnikov. SmarTable je luksuzni izdelek – edinstven in težko dostopen. Za take izdelke je značilno, da njihova cena pokrije vse stroške izdelave (razvoj, proizvodnjo, trženje, itd.) poleg tega pa je še tu ogromen pribitek, ki je odvisen od različnih trgov. Vsaka miza je izdelana posebej in skoraj vse so unikati. Stranka lahko izbira med različnimi oblikami in materiali (različne vrste granita, lesa in stekla). Kot se med sabo razlikujejo izdelki, so različne tudi cene.

Slika 3: SmarTable



Vir: Gorenje, d.d.

Prototip je pritegnil veliko pozornosti v mnogih evropskih državah, dejansko kjerkoli se je pojavil. Koncept futuristične kuhinje pa so predstavili tudi v prilogi časopisa *Financial Times*, v članku naslovljenem *“How to Spend It?”* – Kako ga zapraviti?.

Visokotehnološki izdelki in storitve so del precej nestabilnega okolja, kjer so možnosti za uspeh izjemno nizke. Za to so krivi razni dejavniki –

negotovost trga, tehnološka negotovost in nestabilnost konkurence. Zato je določanje cen toliko bolj pomembno za uspešno poslovanje.

Za uspešno strategijo določanja cen so bistvenega pomena upoštevanje konkretnih stroškov, konkurence in kupcev. Stranke se za nakup visokotehnoloških izdelkov odločijo glede na svojo oceno oz. ovrednotenje izdelka, zato je pri določanju cen vidik kupca toliko bolj pomemben. Določanje cen z vidika kupca pomeni, da prodajalec pozna in razume kupčev način razmišljanja – kako bo uporabljal izdelek – in na podlagi tega določi ustrezno ceno izdelku ali storitvi.

Vsak izdelek ima nek določen življenjski cikel. Za visokotehnološke izdelke je značilen kratek življenjski cikel v katerem cena izdelka zelo hitro pada. Na trgih visoke tehnologije bi morali stroški padati hitreje kot cene izdelkov. Podjetja morajo izriniti nepotrebne stroške, se izogniti blagovnim trgov in poiskati novo uporabnost izdelka, itd. Prodajni oddelek mora ceno prilagoditi fazi življenjskega cikla, v kateri je izdelek. Na primer, cena določena za zgodnji trg (prve kupce) mora biti drugačna kot za večino, ki se bo za nakup odločila kasneje.

V zadnjih nekaj letih je internet pripomogel h krajšemu življenjskemu ciklu visokotehnoloških izdelkov. Z internetom pa je pridobilo določanje cen z vidika kupca. Splet omogoča enostavno in hitro iskanje informacij o prodajalcu, njegovi ponudbi in konkurenci. Uspešni trgovci se držijo načela določanja cen v oziru na kupca.

REFERENCES

1. Bishop Susan: The Strategic Power of Saying No. Harvard Business Review, Boston, 1999, 6, pp. 50-61.
2. Cooper Robin, Kaplan Robert: Profit Priorities from Activity Based Costing. Harvard Business Review, Boston, 1991, 3, pp. 130-136.
3. Dhebar Anirudh: Speeding High-Tech Producer, Meet the Balking Consumer. Sloan Management Review, 37(1996), pp. 37-49.
4. Gardner David: Are High Technology Products Really Different? University of Illinois, Illinois, Faculty working Paper, case: 90-1706, 1990.
5. Greene Jay: The Linux Uprising. Business Week, New York, 3.3.2003, pp. 78-86.
6. Gross Neil, Coy Peter, Port Otis: The Technology Paradox. Business Week, New York, 6.3.1995, pp. 76-84.
7. Hadlock Paul, Hecker Daniel, Gannon Joseph: High Technology Employment: Another View. Monthly Labor Review, 1991, 7, pp. 26-30.
8. Hamel Gary: Killer Strategies That Make shareholders Rich. Fortune, New York, 23.6.1997, pp. 70-84.
9. Kawasaki Guy, Moreno Michele: Rules for Revolutionaries. Harper Business, 1999, 224 pp.
10. Keenan Faith: The Price is Really Right. Business Week, New York, 31.3.2003, pp. 62-67.
11. Kirkpatrick David: Old PC Dogs Try New Tricks. Fortune, New York, 6.7.1998, pp. 186-187.
12. Koch James: Are Prices Lower on the Internet? Not Always! Business Horizons, 2003, 1, pp. 47-52.

13. Lipkin Richard: Fit for a King. *Science News*, 18.5.1996, pp. 316-317.
14. Luker William, Lyons Donald: Employment Shifts in High-Technology Industries. *Monthly Labor Review*, 1997, 6, pp. 12-25.
15. Martin Justin: Ignore Your Customer. *Fortune*, New York, 1.5.1995, p. 122.
16. McDermott Darren: Cost-Consciousness Beats Pricing Power. *Wall Street Journal*, New York, 3.5.1999, p. 1.
17. Mohr Jakki, Sengupta Sanjit, Slater Stanley: Marketing of high-technology products and innovations. Pearson Education, 2005, 480 pp.
18. Quentin Hardy: Iridium Plans to Cut Prices, Alter Marketing Strategy. *The Wall Street Journal*, New York, 22.6.1999, p. 9.
19. Rogers Everett: *Diffusion of Innovations*. Free Press, New York, 1983.
20. Rowland Moriarty, Kosnik Thomas: High-Tech vs. Low-Tech Marketing: Where's the Beef? Harvard Business School, Boston, case 9-588-012, 1987.
21. Rowland Moriarty, Kosnik Thomas: High-Tech Marketing: Concepts, Continuity, and Change. *Sloan Management Review*, 30(1989), pp. 7-17.
22. Reinartz Werner, Kumar V: The Mismanagement of Customer Loyalty. *Harvard Business Review*, Boston, 2002, 7, pp. 86-94.
23. Shapiro Benson et al.: Manage Customers for Profits (Not Just Sales). *Harvard Business Review*, Boston, 65(1987), pp. 101-108.
24. Shapiro Benson, Jackson Barbara: Industrial Pricing to Meet Customer Needs. *Harvard Business Review*, Boston, 56(1978), pp. 119-127.
25. Sinha Indrajit: Cost Transparency: The Net's Real Threat to Prices and Brands. *Harvard Business Review*, Boston, 2000, 2, pp. 3-8.

26. Smith Michael et al.: Role of Market Turbulence in Shaping Pricing Strategy. *Industrial Marketing Management*, 28(1999), pp. 637-649.
27. Wiefels Paul, Moore Geoffrey: *The Chasm Companion: A Field Guide to Crossing the Chasm and Inside the Tornado*. Capstone, 2005, 323 pp.
28. Wildstrom Stephen: Pentium III: Enough Already? *Business Week*, New York, 22.3.1998, p. 23.
29. Wysocki Bernard: Even High-Tech Faces Problems with Pricing. *Wall Street Journal*, New York, 13.4.1998, p. 1.

SOURCES

1. Bundschuh Russell, Devzane Theodore: How to make After-Sales Service Pay Off. [URL: http://www.mckinseyquarterly.com/article_print.asp?ar=1343&L2=16&L3=19&srid=17&gp=0], 2003.
2. Orr Tim: Reducing Total Cost of PC Ownership. [URL: <http://www.nextbend.com/TCO.htm>], 11.7.2002.
3. Vecchio John Del: The Tech Adoption Life Cycle. [URL: <http://fool.com/research/2000/foolsden000825.htm>], 25.8.2007.