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# Marketing Review St. Gallen



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## Aktives Preismanagement



# Debiasing Strategies in the Price Management Process

Pricing executives are prone to a number of biases that can partly explain the theory-practice gap in price management. Decision makers can successfully counteract such irrationalities with so-called debiasing strategies. This article provides an overview of the most relevant approaches and analyzes the extent to which these are already applied in the price management practice.

Dominic Bergers, M.Sc., Prof. Dr. Martin Fassnacht

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or many years, we have found a greater theory-practice gap in price management than in other marketing areas. This result can be partly explained by irrational decisions of pricing managers, which lead, for example, to an inappropriate use of cost-plus pricing approaches (Iyer et al. 2015). Executives are vulnerable to a number of different biases, which are systematic and predictable deviations from rational thoughts and behaviors. These rules of thumb are also used in multi-million dollar decisions — much potentially relevant information is disregarded (Avlonitis/Indounas 2005). Due to the strong leverage effect of the price, mistakes in price management are even more serious than in other areas of the marketing mix.

Nevertheless, it has to be mentioned that in some situations, heuristics can also represent an efficient decision path. This situation is sometimes the case if the decision has no relevant impact on the company's success. However, we tend to apply these learned heuristics to entirely different decision-making contexts (Kahneman/Klein 2009). A large number of companies could significantly improve their price management by taking debiasing techniques into account in their decisions. Admittedly, the research on debiasing has shown that the avoidance of biases and heuristics is complex and time-consuming, but at the same time, a lack of learning processes leads to the fact that the same misdetermination is often repeated (Fischoff 1982; Serfas 2011).

Within the scope of this paper, we show which strategies to prevent biases can be used specifically in pricing. Moreover, we analyze which company characteristics have a relationship to the usage of these methods in the price management practice. It should be acknowledged that the desire to improve the decision-making process must always start from the individual him- or herself. However, the organization can create appropriate framework conditions for this decision (Sunstein/Thaler 2003). For this reason, we divide debiasing strategies into two levels. On an individual level, the individual employee is asked to follow the strategies independently. This request can be promoted, for example, by the organization's management education. At a company's level, "decision-analysis tools," for example, can prevent biases at an early stage.

#### 1. Background

#### 1.1. Debiasing and the Price Management Process

The landscape of debiasing strategies is very fragmented. Many solutions aim for debiasing with regard to single biases – there are only a few general approaches. These universal

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tactics are the focus of this paper, and all of the strategies we will discuss can be applied to various steps of the price management process. We also empirically analyze the implementation to the management practice and identify areas with good coverage of theory and practice as well as improvement potential. An overview of these twelve debiasing strategies applied to the price management process according to Simon and Fassnacht (2016) can be found in Table 1. "Install Devil's Advocate" and "Shape Decision Environment" are general approaches that are relevant across all process phases. All other strategies can be applied to specific steps of the process. For reasons of space, we will justify the allocation to the price management process phases only by means of single examples (1.2/1.3). It should be noted, however, that the same debiasing strategy can be used in several phases.

The price management process begins with the strategy phase, which provides the framework for price management including price positioning and company goals. In the analysis phase, costs, customer benefits and competitive offers form the economic analysis of the price. According to the authors, these variables are influenced by underlying psychological and behavioral mechanisms. The next phase, the decision phase, considers both one-dimensional pricing, price differentiation and price bundling (multi-dimensional pricing) as well as the long-term optimized pricing. The final phase is the implementation phase, which aims, for example, to define clear responsibilities within the company as part of the internal implementation and deals with price communication as part of the external implementation. The process ends with the price monitoring, which is the overall controlling of the four preceding phases.

In the further course of Section 1, we will briefly explain each of the twelve general debiasing strategies. As mentioned in the introduction, we, therefore, categorize them into individual level and organizational level strategies.

#### 1.2. Individual Level

#### Create Bias Awareness

This strategy attempts a self-identification of existing biases followed by an analysis of the underlying mechanisms. Thus, this simple method is based on the fact that the mere knowledge of one's susceptibility already combats biases (Bazerman/Moore 2013). According to Serfas (2011), however, the strategy counteracts very simple decision errors and fails with higher complexity. Neverthe-

less, the created consciousness forms the basis for all further debiasing strategies.

Derivation example strategy phase (Table 1): Being aware of biases helps to prevent decision-makers from conducting price positioning or price repositioning based on intuition or inadequate analysis or merely on the basis of past practices.

#### Take an Outsider's Perspective

An insider's view biases the decision maker so that he or she considers each situation as unique, which leads to overconfidence in evaluating the accuracy of his own beliefs and decisions. The strategy to take an outsider's perspective removes oneself mentally from a specific situation and enables the decision maker to generalize across situations. This ability redu-

Table 1: Debiasing strategies applied to the price management process

		Debiasing Individual Level						Debiasing Individual Level					
		Create Bias Awareness	Take an Outsider's Perspective	Reason Analogically	Draw Attention to Alternative Outcomes	Acquire Expertise	Decompose and Restructure	Understand Biases in Others	Educateand Train	Introduce Decision- Analysis Tools	Install a Devil's Advocate	Shape Decision Environment	Increase Incentives and Accountability
	Goals	х			х		х	х			х	Х	х
Strategy	Price Positions/ Price Repositioning	Х	Х		х	х	Х	Х	х	X	Х	x	Х
Stra	Price Regulations					Х					х	Х	
	Price and Shareholder Value			Х							Х	Х	
	Economic Analysis		х	Х			х	х		х	х	х	
Analysis	Psychology of Price		х	Х					х		х	Х	
•	Behavioral Pricing		х	х					х		х	х	
	One-Dimensional Pricing	х			х	Х	х	Х	х	х	х	Х	х
Decision	Multi-Dimensional Pricing	х	х	х	х	х	х	х	х	х	х	х	х
٠	Long-Term Optimized Pricing	х	х	х	х	х	х		х	х	х	х	х
ation	Internal Implementation	х			х	х	х	Х	х	х	х	Х	
Implementation	External Implementation	х	х		х	х	х	х	х	х	х	х	х
Impk	Price Monitoring			х				х	х	х	x	х	

Source: Debiasing strategies applied to the price management process according to Simon and Fassnacht (2016).



ces decision makers' overconfidence about their knowledge and the time it would take them to complete a task (Gigerenzer/Hoffrage/Kleinbölting 1991; Kahneman/Lovallo 1993).

*Derivation example analysis phase:* For the collection of pricing-relevant information, an outsider's thinking perspective, preferably that of the direct competitor, can be assumed. In the context of reverse engineering, for example, the product costs of the competitor can thereby be evaluated.

#### Reason Analogically

This technique is the simplest and most common method of reasoning. It motivates decision makers to identify and understand general underlying principles of different objects, situations, or events so that they can apply their learnings in other contexts. This understanding overcomes the tendency to focus too much on irrelevant aspects of a decision-making situation and to assume that what is learned is applicable only to the current and specific situation.

*Example analysis phase:* The determination of price elasticity, cost function, pricing function, or competition prices and competitive behavior give the pricing decision makers significant insight into the behavior of customers with regard to their product or service. This acquired knowledge should be generalized and used as input for the other phases of the price management process.

#### Draw Attention to Alternative Outcomes

By developing counterarguments or alternative targets, different objectives can be examined for their granularity and applicability. The strategy is based on the assumption that when analyzing contrary opinions, one usually considers aspects that have not been previously recognized. It is a general approach that is particularly effective with regard to the confirmation bias, the overconfidence bias, the hindsight bias, and the anchoring bias (Arkes 1991; Burson/Larrick/Lynch 2009; Mussweiler/Strack/Pfeiffer 2000).

*Derivation example strategy phase:* Eventually, controversial goals such as competition-oriented objectives and high return on investment can be challenged by this debiasing strategy: are there reasons or explanations that both targets cannot be achieved simultaneously?

#### Acquire Expertise

To develop expertise, decision makers need to constantly monitor and be aware of the processes they use for making

decisions. This process differentiates "expertise" from "experience," which is just repeated feedback (Salas/Rosen/DiazGranados 2010).

However, managers tend to misremember their own predictions. This issue leads to the fact that people regularly underestimate the discrepancy between actual outcomes and their estimates, which ultimately lets the learning process fail. For this reason, the strategy is only applicable to simple facts.

Derivation example decision phase: The strategy allows involved actors to avoid intuitive decisions on one-dimensional, multi-dimensional, and long-term optimized pricing and to monitor the impact of these decisions consciously. (Was the definition as a one-dimensional price sufficient? Was important information missing because one has focused on a single source only – e.g., only on costs? Can these findings be used to develop process steps for the future, thereby reducing the imbalance of one-dimensional prices?)

#### Decompose and Restructure

A complex decision problem is easier to solve if the problem is decomposed into its components: objectives (what you want), alternatives (what you can do), uncertain events (what you know or do not know) and outcomes (the impact of choices and uncertain events on objectives). Pricing decision makers should organize these objectives in a hierarchy illustrating the relationships between objectives and their attributes. This problem restructuring leads to a changed perception of the issues by the involved parties (Bond/Carlson/Keeney 2008; Sycara 1991).

Derivation example strategy phase: The subdivision into various process steps makes sense in pricing, among other things, in the goal formation of a company. A classification into short-term corporate objectives and milestones and long-term company goals and milestones, as well as the granularity check of the various goals, would be appropriate. This strategy avoids relevant aspects such as the difficulty of a simultaneous objective of enterprise growth, and growth of the market share is not overtaken.

#### **Understand Biases in Others**

The basis of this technique is to understand the nature and sources of biases (i.e., "Create Bias Awareness"). This understanding makes it possible for pricing managers to establish critical thinking, detect inconsistencies and common

mistakes in reasoning, and consequentially, proactively challenge the counterpart's reasoning when displaying acts of obvious biases (Kahneman/Slovic/Tversky 1982).

*Derivation example analysis phase:* By evaluating similarities, differences, improvements, weaknesses, and other tendencies of past pricing decision makers, current managers can be made aware of their own tendencies when analyzing price-relevant information.

#### 1.3. Organizational Level

#### **Educate and Train**

Within this debiasing strategy, managers are educated about implicit and explicit biases as well as the impact of biased behavior on the organization and the individual. Furthermore, the debiasing technique itself can be trained (Serfas 2011). These training programs should be anchored as part of new organizational policies and reviewed via measuring tools to track progress.

Derivation example implementation phase: Training sessions and seminars on biases in the internal and external implementation form the basis for an objective decision in this phase. To these strategies, others such as "Understand Biases in Others" should be applied.

#### Introduce Decision-Analysis Tools

Complexity can cause the decision maker to focus on the wrong problem or decision. Decision-analysis tools provide support in managing these complex decisions. They aim to raise consciousness about decision-making by pointing out the errors and biases in it (Buchanan/O'Connell A. 2006; Keefer/Kirkwood/Corner 2002).

Derivation example analysis phase: Although no direct decisions are made regarding the price response function or price elasticities, information is consolidated based on demand figures and fixed price levels. In this process step, linear models can be used. These models are based on past price decisions and their results in the market and should be used for future decisions.

#### Install a Devil's Advocate

A devil's advocate identifies and challenges the flaws in an assessment, a plan, or a strategy. Installment takes place to provoke a debate or test the strength of the opposing arguments. The debiasing strategy avoids groupthink, a psycho-

logical phenomenon in which conformity to in-group harmony results in irrational decision-making.

Derivation example all phases: Internal third parties who constantly question the decision maker's position should be applied to all price management tasks in which decisions are made (goals; price positions or repositioning; one-dimensional, multi-dimensional, and long-term optimized pricing; internal and external implementation; price monitoring).

#### **Shape Decision Environment**

This debiasing strategy is less direct, shaping the decision environment to nudge better decisions. People are only limited rationally in their decisions and can inevitably be influenced by the context. This influencing should be done in such a way that the "general welfare" is supported.

Derivation example implementation phase: Regarding the awarding of positions as pricing manager, it makes sense to let responsible managers evaluate multiple potential candidates jointly instead of individually. This process lets the decision maker focus on the potential pricing managers' capabilities rather than stereotypes – more ethical decisions are made, and the performance increases (Bohnet/van Geen/Bazerman 2012).

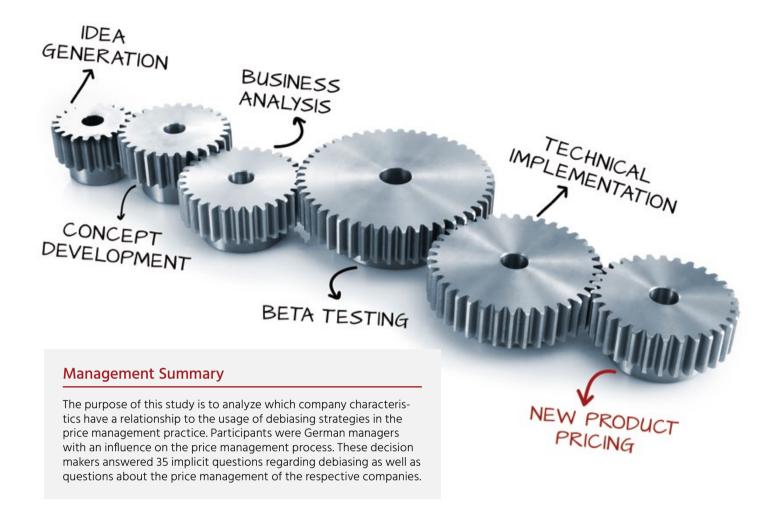
#### Increase Incentives and Accountability

Preliminary to this strategy, the organization's top objectives have to be established ("strategy phase") first. When people are incentivized to reach these goals, individuals expend more effort on reflection and calculation. Incentives lead to an indepth search of alternatives and hinder the emergence of biases through a superficial search. Each team member should, therefore, be assigned clear roles and individual ownership, and reward results should be developed. The arising accountability evokes a social need to look consistent to others.

Derivation example decision phase: In this phase, accountability ensures that decisions with regard to different price mechanisms are made sensibly. (Does a multi-dimensional price mechanism in a particular case make sense? Does price bundling make sense for a particular product, or should the individual components remain unbundled?)

#### 2. Methods

Having now described the twelve general debiasing approaches relevant for a company's price management, the aim of the empirical survey is to determine the extent to which the-



se strategies are applied in the management reality. Deduced from the literature, we have broken down the characteristics of the approaches discussed above into 35 implicit questions. We then asked the participants to assess how often a given statement applies to themselves or their organization when dealing with a price management decision using a five-point Likert scale (1: "very inaccurate" self-description, 5: "very accurate" self-description).

#### Examples:

- "How often do you imagine that your decision is someone else's, and you are just giving advice?" (Take an Outsider's Perspective)
- "How often do you divide a decision into multiple components in order to simplify it?" (Decompose and Restructure)

Additionally, we queried detailed information about the price management process of the respective companies – for example, the degree of professionalization and the existence and structure of separate pricing departments.

Participants were solely German managers with an influence on the price management process. Usually, the re-

sponsibilities for this topic is spread out within companies, which is also reflected in our sample. The largest group of the 172 respondents was composed of members of the management or executive board (37.21%), followed by sales managers (18.13%) and managers in the area of controlling and finance (12.89%).

The professional experience of the participants averaged 16.34 years (arithmetic mean). As expected, the educational background was mainly commercial (60.82%). At 65.50 percent, the proportion of male respondents was somewhat higher than that of women, which can be explained by a generally higher proportion of men in junior and senior management positions. The average age of the participants of 41.04 years, as well as the average income, also matches the hierarchy level. In terms of income, 39.18 percent of the participants earned between 50 000 and 99 999 euros annually, 15.79 percent between 100 000 and 149 999 euros, and 6.43 percent over 150 000 euros.

We also succeeded in establishing a good distribution in the size of the companies in which these executives operate in terms of turnover. The smaller companies in the study with sales less than 50 million euros comprised 25.15 percent, followed by those ranging between 50 and 100 million euros in sales at 14.62 percent. Mid-table were companies with a turnover of 100 to 350 million euros (15.20%) and 350 to 750 million euros (21.05%). On the other hand, 23.98 percent of the executives interviewed were acting for companies with sales of more than 750 million euros, including 16 of the 172 corporations that had a revenue of over two billion euros. The average number of employees of all these companies was 7.081.

#### 3. Results and Discussion

Looking at the average use of debiasing strategies of the 172 respondents, one notes that all strategies are used on a medium level (Table 2), which leads to an overall debiasing usage score of 3.37. In our opinion, a score above 4.0 would be desirable, which seems to be achievable with professional price management.

However, in the further course of this section, we will focus on some revealing differences. Looking more closely at the data, we see that there are great differences when one

Table 2: Average usage of debiasing measured on a five-point Likert scale

Debiasing Strategy	Arithmetic mean	Standard deviation
Individual Level		
Create Bias Awareness	3.29	.79
Draw Attention to Alternative Outcomes	3.37	.79
Reason Analogically	3.58	.68
Take an Outsider's Perspective	3.33	.80
Acquire Expertise	3.61	.66
Decompose and Restructure	3.39	.75
Understand Biases in Others	3.52	.70
Organizational Level		
Educate and Train	3.27	.84
Introduce Decision-Analysis Tools	3.27	.89
Install Devil's Advocate	3.19	.92
Shape Decision Environment	3.21	.79
Increase Incentives and Accountability	3.34	.88
Overall		
General usage of debiasing strategies	3.37	.62

<sup>1 = &</sup>quot;very inaccurate" self-description, 5 = "very accurate" self-description (n = 172). Source: Bergers/Fassnacht, 2017.

considers the relationship between the price management structure of the companies surveyed (e.g., the existence of a separate pricing department) and the overall debiasing usage, measured by the average value of the twelve single debiasing scores (Table 2, at the bottom).

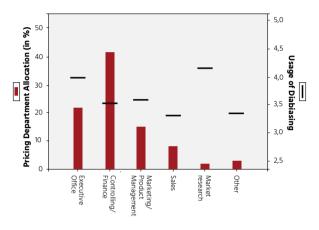
A separate pricing department is extremely useful, especially for companies with a large assortment of products or with the need for frequent price decision-making. In our study, 62.2 percent of the interviewees reported that they have a division in the company that is mainly responsible for pricing. To illustrate if the existence of such a division has an influence on debiasing strategy usage, a one-way between subjects ANOVA was calculated, which shows to be significant (F(1,168) = 56.962, p < .01,  $\eta$ 2 = .253).

21.5 percent of the companies with a pricing department report directly to the executive office. Looking at the descriptive data (Figure 1, right scale), it is shown that debiasing strategies are used second most frequently when price management is established at this hierarchy level. This overall debiasing usage score is only exceeded when a pricing department reports to the market research. Traditionally, this division is very fact-based and is open to up-todate scientific methodologies, which may be the reason that the importance of debiasing techniques already seems to be very present. However, in most cases (42.1%), pricing departments of the companies of our study are assigned to the controlling and finance divisions. As the descriptive data shows, competence that is established at that function goes hand-in-hand with a usage of debiasing strategies that is slightly above average.

Besides, as one might expect, performing a linear regression shows a positive relationship between the degree of perceived professionalization of the price management process and the use of debiasing approaches (F(1, 168) = 51.217, p < .01, R<sup>2</sup>=.234,  $\beta$ =.483). On a positive note, the level of perceived professionalization in price management, measured by a direct query regarding the overall process, is generally high. As the top two levels in Figure 2 show, 61.0 percent of the participants assess it as "very high" or "rather high." Only in a few cases was the professionalization grade classified as "below average" (7.0%) or "very low" (1.2%). These ratings suggest that the theory-practice gap in pricing continues to reduce. In our opinion, a reason for this closure could be a less abstract university education, particularly because of the strengthening influence of the business school concept in Europe. We assume that the knowledge acquired is more practically experienced, more frequently applied, and less quickly forgotten.

### Fig. 1: Pricing department allocation; overall debiasing usage

Organizational allocation of an existing pricing division (bar chart) and the overall use of debiasing strategies depending on this reporting line.



Likert scale, 1 = "never," 5 = "always". Source: Bergers/Fassnacht, 2017.

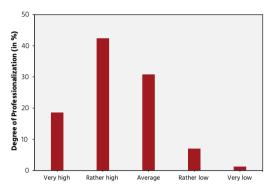
On the other hand, on an individual managers' level, the results of the study are alarming when one considers the highly significant relationship between the professional experience of the participants and their use of debiasing strategies. Again, a linear regression shows that with increasing professional experience of the manager, the use of strategies to oppose biases

#### Lessons Learned

- **1.** There is a number of important debiasing strategies that can be easily implemented into the price management process.
- In practice, debiasing strategies are used significantly more often in companies that have their own pricing department.
- **3.** Looking at the descriptive data, the usage of debiasing strategies differs for each division to which the pricing department reports.
- **4.** It is alarming that managers with increasing experience decrease their use of debiasing strategies in pricing.

### Fig. 2: Price management professionalization

Degree of professionalization of the price management process compared to other marketing management issues such as sales, product, and brand



Source: Bergers/Fassnacht, 2017.

falls (significant negative relationship; F(1, 168) = 6.290, p < .05,  $R^2 = .036$ ,  $\beta = -.190$ ). Thus, the professional experience of the managers involved in the price management process gives them a sense of security that they are more rational in their actions. However, this is not the case – depending on the biases, the susceptibility to making irrational decisions is even higher with increasing professional experience (Shepherd/Zacharakis/Baron 2003; Northcraft/Neale 1987). For enterprises, it is, therefore, important to embed the strategies discussed, particularly through intensive training with senior pricing managers as the most important focus group while at the same time drawing attention to their higher vulnerability – this is the only way their false sense of security can be counteracted.

For future research it would be advisable to further examine the relationship between corporate culture, the susceptibility for biases and the use of debiasing strategies. The center of such cultures consists of the shared understanding of common practices. Primarily, they are distinguished by the different levels of rituals, heroes, and symbols. These practices tend to be more superficial and are learned and abandoned more effortlessly than the values of national cultures. We would suggest that employees of results-oriented organizational cultures would be more likely to apply heuristics because they might be searching for similarity or applicability of familiar situations to reduce uncertainty and

increase their chances of performing well. We further suppose that the tendency of biased decision-making and therefore the use of heuristics would be greater in a job-oriented culture since there is a high pressure to perform well and complete work efficiently. Additionally, decisions are not reviewed by others, which increases the likelihood of onesided, flawed choices. Moreover, we suppose that the susceptibility to biases is greater in a closed system organization because there is less open communication and feedback, which may result in unchallenged decisions. In organizations with open systems, information exchange invites criticism and a review of decisions, which prevents unilateral views and egoistic settlements. Fourthly, we also presume that pragmatic, competitive cultures driven by outcomes would entail high-pressure environments, which could direct managers to utilize heuristics more often.

#### **Recommended Action**

Debiasing strategies should be firmly anchored in the respective price management process phases of strategy, analysis, decision, or implementation and should be used consistently. On an organizational level, for example, decision-analysis tools or a devil's advocate can counteract biases. The "Educate and Train" approach should be used to give all employees an understanding of the individual-level strategies. Additionally, for the most rational price management, a collaboration of market-oriented departments and internal functions such as controlling and finance is decisive. In general, it is also advisable to set up a separate pricing department, which should act as the driver of the topic within the company.

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