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Price decisions, values, and cost management: A pragmatic constructivist approach

Trond Bjørnenak

Norwegian School of Economics; Trond.Bjornenak@nhh.no

Jakob Mathias Liboriussen

Norwegian School of Economics; Jakob.Liboriussen@nhh.no

Abstract

This paper suggests the paradigm of pragmatic constructivism as a novel and fruitful way for researchers to explore pricing approaches in practice. To do so, the paper leverages pragmatic constructivism's concept of reality integration to discuss four classical pricing approaches. These approaches are: i) the economist approach; ii) the cost-plus pricing approach; iii) the competition-based pricing approach; and iv) the customer-based pricing approach. Our findings suggest that pricing literature within the fields of economics, marketing and strategy often is not able to sufficiently take the complex reality of practice into account. Specifically, we argue that the literature takes too reductionistic approaches to the pricing phenomenon. This paper agrees with the marketing- and strategy-based pricing literature's critique of the assumptions of the neoclassical theory of the firm. However, in contrast to this literature, we argue that the cost-plus and competition-based pricing approaches are still highly relevant. Based on our findings, we suggest that the practice-paradigm of pragmatic constructivism may be a fruitful departure point for future research to develop a richer and broader understanding of pricing in practice that potentially could lead to more advanced pricing conceptualisations.

1 Introduction

Pricing is a very important, but complex, decision for actors involved in practice. Such decision involves actors to generate knowledge and reflect upon the costs, customers and competitors of their contextual situations. For many companies minor adjustments in prices may have a major impact on the bottom line. A number of studies have shown that the price lever is the most efficient way to increase a company's profitability. For example, Raju and Zhang (2010) claim that on average for a large set of US companies, cutting fixed cost by 1% increased profitability by 2,45%, an increase in sales by 1% increased profitability by 3,28% and cutting variable cost by 1% increased profitability by 6,52%. However, increasing prices by 1% increased profitability by 10,29%! The numbers vary between industries and companies, mainly driven by differences in the cost structure and profit margins.

But these technical calculations are based on an assumption of everything else being equal. In the real world, it is not, and determining the optimal price is a very difficult task. The main reason is that there are so many factors that affect the optimal level. How will customers react to price changes and what will competitors do? How do our prices affect our relationship with customers? Pricing is therefore an issue in many disciplines, such as economics, management accounting, marketing and strategy. More recently, pricing has also become an important topic in machine learning and utilization of Big Data. Here, questions related to whether computers are "better" than humans to set the prices are raised and reflected upon (Agrawal et al., 2018). Such questions will of course depend on what we mean by better. However, what are the relative advantages of computers and human judgment?

On the societal level, prices are also important for people. This is not given much attention in modern textbooks or in the management accounting literature. But recent increases in prices are clearly on the political agenda, mainly driven by the increasing inflation all over the world. Prices affect the lives of individuals, but also the distribution of wealth. Monopolies may create billionaires, but also the need for price regulations to limit their price potential. Thus, pricing decisions are not only important for actors in a market but for the society as a whole.

This paper considers pricing as an active action taken by actors who may choose different strategies or approaches to set their prices. Empirical studies show that cost-plus pricing is the dominant approach (e.g. Laitinen, 2011). However, this approach is also heavily criticized in the economics and marketing- and strategy-based pricing literature (e.g. Nagle & Müller, 2018). The main argument is that this approach does not secure the optimal price, and thus the profit potential for the company. Alternative approaches are more market-oriented or customer-oriented price strategies.

More specifically, conventional wisdom in management accounting i.e. textbooks (e.g. Bhimani et al., 2019 and Datar & Rajan, 2021), highlights the three most important sources of information to make pricing decisions in practice: i) the cost of producing the product / service; ii) The prices charged by our competitors; and iii) the customers willingness to pay for our products. How organizations set their prices differs between industries and actors within industries. In some industries the price is given by the market /competitors (e.g. oil). In others there are significant room for more individualized price setting based on the customers' willingness to pay (e.g. flats). Thus, organizations may put different weight on different sources of information.

Based on the many complexities of pricing in practice, this paper revisits some classical approaches to pricing to better understand how actors may use them in practice. These approaches are: i) the economist approach; ii) the cost-plus pricing approach; iii) the competition-based pricing approach; and iv) the customer-based pricing approach. Drawing on the paradigm of pragmatic constructivism (PC) and its notion of reality integration, we explore how the four different pricing approaches may impose or form different views of reality and reflect upon the possibilities for applying the different approaches in practice.

The rest of the paper is structured as follows. First, we provide a short introduction to PC and its notion of reality integration. Then, we present and reflect upon the four pricing approaches through the analytical lens of PC. Finally, we conclude with suggestions for future research on the pricing phenomenon.

2 Pragmatic constructivism and the notion of reality integration

The paradigm of PC provides a solid paradigmatic foundation for exploring the possibilities for the application of the four pricing approaches in practice (H. Nørreklit et al., 2010). Inspired by the late Wittgenstein's (1953) notion of language games (L. Nørreklit, 2017), pragmatic constructivism provides a foundation for "...*explaining, understanding, justifying and defending practice*" (H. Nørreklit et al., 2010, p. 733) by conceptualising how "...*practitioners construct functioning activities*" (H. Nørreklit et al., 2016, p. 278).

Pragmatic constructivism considers the actor as an intentional and reflective human-being able to (co-)author her activities opposed to being a passive adopter (H. Nørreklit, 2017). Thus, in the view of PC, "...*the concept of reality is an instrument for the actor to guide and control her construction of actor-world relations*" (L. Nørreklit, 2017, p. 29). PC argues that for an actor to create functioning practice, she must be able to integrate a set of four dimensions of reality in the reality construction (H. Nørreklit, 2017). These dimensions are facts, possibilities, values and communication. To elaborate, the actor needs a factual basis for identifying and acting on various possibilities within her contextual situation. However, the actor may only act on the factual possibilities if they are within her value range. As the actor acts in the human life world, she will often need to communicate about facts, possibilities, and values with other actors to create intentional outcomes (i.e. co-authorship). Hence, if the four dimensions of reality are not sufficiently integrated in the reality construction the actor will not succeed in creating intentional outcomes (Jakobsen et al., 2011; H. Nørreklit, 2017). Since no actor can foresee the future, pragmatic constructivism introduces a learning theory of truth involving a learning circle between pro-active truth (i.e. what the actor expects to happen) and pragmatic truth (i.e. what happens). As such, PC provides a pragmatic criterion for evaluating the success or failure of the reality integration (H. Nørreklit, 2017).

The conceptual development of the PC paradigm allows researchers to link abstract theoretical reflections with illustrative examples from practice (Kure et al., 2020). Hence, it is a powerful paradigm for researchers aiming to narrow the research-practice gap (H. Nørreklit et al., 2016). This includes both assessment of various management (accounting) techniques and methods in theory and practice and the paradigm's provision of conceptual building-blocks that can support researchers in developing conceptualisations of novel and advanced management (accounting) techniques and methods for practice (Baldvinsdottir, 2021; Jakobsen et al., 2011; Korhonen et al., 2021; Leotta & Ruggeri, 2022; Liboriussen et al., 2021; Mitchell et al., 2021; Nielsen et al., 2015; H. Nørreklit, 2017; H. Nørreklit et al., 2012, 2016; H. Nørreklit & Trencă, 2021).

2.1 Reality integration in pricing

The four reality dimensions may be considered differently by actors involved in pricing activities. To elaborate, *the factual basis* on which actors may set their prices can vary depending on the context of the practice situation. For example, the market and cost structure of a business school vary from an oil company or a luxury hotel. Facts about the

cost may be more important for a business school, the market pricing for a oil company, and the customers willingness to pay for a luxury hotel. This factual basis is also influenced by the values that may operate in the organisational context. Such values could concern whether the company only values shareholders or if it also considers the value of other stakeholders, e.g. the society, employees and customers. As such, facts and values of other stakeholders in the organisational context may also have implications for the factual possibilities of actors involved in pricing activities. Lastly, the communicative skills of the actor may also influence the factual possibilities of pricing a product. An example of such, may be the commercial communication of the Patek Phillipe watch company: “*You never actually own a Patek Philippe. You merely look after it for the next generation*” (Patek Philippe, 2022). Such communication aims to convince a potential customer to buy a very expensive watch. However, it may also infer that Patek Philippe commits to higher production costs of their watches if they want a long-run business, e.g. more expensive input components, production machines and/or skilled workers.

2.1.1 Pricing in practice: a short illustrative example of the Henry Ford case

To anchor the four reality dimensions in a practice context, we may consider the following quote (i.e. intentional communication) by Henry Ford (Levinson et al., 2013. p. 54):

“I will build a car for the great multitude. It will be large enough for the family, but small enough for the individual to run and care for. It will be constructed of the best materials, by the best men to be hired, after the simplest designs that modern engineering can devise. But it will be so low in price that no man making a good salary will be unable to own one...”

The quote above addresses all four reality dimensions. For example, the value(s) of Ford may be reflected in his intention of making an affordable automobile of good quality. Such intention may or may not be connected to underlying values of e.g. freedom, “the American dream”, quality and/or materialism. The factual possibilities for such price-setting depends on the factual foundation of the organisation, e.g. is the company able to produce a car for an amount of costs that is low enough to still make a profit? To articulate, coordinate and realise Ford’s vision required him to engage in communicative actions with other actors, e.g. investors, employees and customers. Hence, to create intentional outcome, Ford needed to sufficiently integrate facts, possibilities, values and communication.

3 A pragmatic constructivist analysis of four classical pricing approaches

This section draws on PC’s notion of reality integration to explore the following four pricing approaches: i) the economist approach; ii) the cost-plus pricing approach; iii) the competition-based pricing approach; and iv) the customer-based pricing approach. Particularly, we use the notion of reality integration (facts, possibilities, values and communication) to reflect upon the possibilities of using the pricing approaches in practice. To anchor the analysis in a practice setting, we draw on an illustrative example of pricing an Executive MBA program in a Norwegian business school. Box 1 below provides some contextual background of such setting.

Box 1: Contextual background of pricing an Executive MBA program.

The Executive MBA program is run in small classes, with high interaction with faculty, top managers, and others. The cost per participant is high compared to other programs run by the business school, and the school does not receive any public compensation for the program. As such, to cover the cost, the program fee has to be considerably high. However, all participants are working in practice, typically with an above average salary. In most of the cases, the employer pays all or a part of the program fee. The business school is owned by the State and has a strong position in the market for Executive programs.

The illustrative example of pricing an Executive MBA program does not draw on empirical data from the actual discussion of the price but is informed by our experience from discussing the pricing issues at our business school. The example is used to construct alternatives and dilemmas that potentially could come up in the price discussion when setting the price for such MBA programs. It is also an example with significant discretion in the price decision. The customers are both individuals (participants) and companies (paying for the participants) and there are alternative MBAs in the same market, although the alternatives are different. Thus, it is a rather complicated decision, that also involves ethical considerations.

As such, we use the illustrative example to show that pricing activities in practice are complex and vary depending on the situational context. This infers that one may think of many other problems of reality integration with the pricing approaches than those suggested in the following sections. However, our intention is not to make an

exhaustive example of the pricing of an MBA program, but to increase awareness of the complex situation of pricing in practice and the need for knowledgeable reflective actors that much pricing literature does not seem to sufficiently portray.

3.1. The economist approach: relevance lost?

The neoclassical theory of the firm states that the optimal price is where marginal product cost (mc) equals marginal revenue (mr). This leads to an approach to optimal pricing that follows the Amoroso-Robinson (AR) rule which states that the only relevant information for price decisions are the marginal cost (mc) and the price elasticity (ϵ) (Amoroso, 1939; Robinson, 1933). If the price (p) is optimal, according to the AR rule, the following equation will hold (see e.g. Pindyck & Rubinfeld, 2005):

$$p = \left(\frac{1}{1 + \frac{1}{\epsilon}} \right) mc$$

This is also known as the inverse price-elasticity formula, and according to this we only need to estimate marginal cost and price elasticity to set the optimal price, which normally rules out the relevance of full cost. Note that the formula does not give the correct price but the direction for the optimal price under certain conditions (Fjell, 2003). The economist approach is illustrated in box 2.

Box 2: The economist approach in pricing an Executive MBA program.

Pricing an MBA program per participant. Assume the price is set to 25 000 Euros per MBA participant per year. At this price level the price elasticity is estimated to be -2, i.e., a reduction in price by 1% will increase the demand by 2%. Assume that the marginal cost per participant is estimated at 5 000 Euros. If we put this numbers into the AR formula, we get $p = 10\ 000$ Euros. Thus, according to the AR-rule the price (25 000) is too high. However, if we reduce the price, both marginal cost and price elasticity will change, and we need to recalculate p.

The AR rule is developed in a one product setting. In the real world, changing the price of one product may have an effect on the demand of other products. If the price of one product i is dependent of the price of another product j, we must take this into account. This can be achieved by extending the inverse elasticity formula to the following (see e.g. Laitinen, 2011):

$$p_i = \left(\frac{1}{1 + \frac{1}{\epsilon_i}} \right) * mc_i - (p_j - mc_j) * \frac{\epsilon_{ji}}{1 + \epsilon_i} * \frac{Q_j}{Q_i}$$

This formula shows that the optimal price of product i is dependent of the price elasticity (ϵ_i) and marginal cost of product i, but also the contribution margin ($p_j - mc_j$) and relative volume (Q_j/Q_i) of product i and j, and the cross-price elasticity between the two products (ϵ_{ji}). More products increase the complexity, but it is still possible to develop a formula for guiding the price decisions based on elasticities and marginal cost.

3.1.1 Reality integration of the economist approach

Drawing on the four reality dimensions of PC, we may identify several reasons for why the economics approach are hardly used in practice to set prices (Nagle & Müller, 2018). For instance, the economist approach suffers from a lack of facts concerning the input to the formula. In the simple one product setting we only need the marginal cost and the price elasticity for the product. However, these parameters are difficult to find. Ahmed & Scapens (2000) argue that management accounting systems traditionally are not designed to estimate marginal cost, but to ensure systematic recovery of all cost and a reasonable return on investment. Zimmerman (1979) argues that the marginal cost should include the often hard to observe opportunity cost of using constrained resources, and that the average cost may be both an underestimation and overestimation of the marginal cost. Thus, most companies do not have reliable estimates of the marginal cost. Nor do they have reliable estimates of the elasticity or the marginal revenue for their products. Thus, the economist approach to pricing is practically impossible to implement due to this lack of basic facts.

In addition, the economist approach also fails to recognize the possibilities that an actor has. In the economic model for pricing, there is hardly any room for a proactive actor. Only the marginal cost matters, and fixed costs do not have relation to the price. However, changing market conditions may give an active actor momentum to reduce all costs. Acknowledging the link between pricing and cost management may open other possibilities than recognized by the AR rule. Also, the price elasticity or the marginal revenue is something that may be actively altered through communication, e.g. the marketing of Patek Philippe watches mentioned above. Finally, the economist approach also represents a very simplistic view of actors' values. The model assumes that the goal of an actor (company) is to maximize the short-term profit. But companies may also value stability and reduced risk, or volume and more work for employees. Box 3 below illustrates some critical problems of using the economist approach in practice.

Box 3: Problems of the economist approach in pricing an Executive MBA program.

In the MBA example we assumed that we knew the marginal cost and the price elasticity. This is hardly the case. The marginal cost should include the often hard to observe opportunity cost of using resources in the program, e.g. using professors that otherwise would have taught in other programs or done something else (e.g. research). Nor is the price elasticity observable, and it may be significantly influenced by the way the business school communicate the program. There is also considerably asymmetry in knowledge between the customer (participant or company) and the producer (the business school), which may be affected by an active agent. Last, but not least, the Business school is a non-profit organization with other values than maximum profit. Thus, even if we had the facts necessary to calculate the optimal price, the AR rule would still not be relevant.

The reality dimensions of PC provide us with insight to why the economist approach is rather irrelevant for practice. It is based on constructs that are extremely difficult to observe in the real world. But more importantly it fails to acknowledge that pricing is an active choice by real actors often with other values than short-term profit maximization. These actors can also change both costs (including fixed costs) and demand by active leadership and external communication. Thus, at best the neoclassical model provides us with limited insight to the pricing decision. At worst it may be directly misleading.

3.2 Cost-plus pricing: still relevant?

Cost-based pricing is often referred to as the accounting approach because it is based on calculated costs for the products. Typically, businesses that use this approach base their prices on fully allocated cost. The term cost-plus indicates that something is added to the cost to set the price. This could simply be a normal return on investment, or it could be a discretionary profit target. The markup on cost also adds an element of flexibility into the approach since the markup may be made dependent on market condition and management discretion.

The marketing and strategy-based pricing literature is normally very critical to cost-plus pricing. For instance, Nagle et al. (2011, p. 18) claim that “in theory, it [cost-based pricing] is a simple guide to profitability, in practice it is a blueprint for mediocre financial performance”

The main critique of the cost-based approach is the lost opportunities caused by not taking the two other C's into account, i.e. the customers willingness to pay and the competitors prices. This may reduce the profitability of the company:

“Many companies now recognize the fallacy of cost-based pricing and its adverse effect on profit. They realize the need for pricing to reflect market conditions. As a result, some firms have taken pricing authority away from financial managers and given it to sales or product managers.” (Nagle & Müller, 2018, p. 5).

Nevertheless, cost-based pricing is still considered to be the dominating approach in practice (see e.g. Raju & Zhang, 2010). Given the widespread warnings, both by economists and marketing managers, this is considered a paradox. Drawing on the reality dimensions of PC, we may improve our understanding of this paradox.

3.2.1 Reality integration of the cost-plus pricing approach

Many companies have a factual basis that can provide them with a reasonable idea about the costs that needs be covered in a given period. Such facts may be grounded in knowledge about their own products, (potential) customers and competitors, e.g. through historical numbers and market analysis. In some cases, it is hard to trace the costs to individual products and the full cost approach may be based on arbitrary allocations of costs. Another challenge is the unknown sales volume. When sales are reduced, average cost increases due to the facts that fixed cost per unit increases. Thus, in some cases, e.g. platform services like Google, the average cost may be very uncertain and the marginal cost far lower than average cost. However, in other cases, a high level of the resource consumption is directly

associated with the product delivered. Note that there is a long tradition for establishing a fact base for full cost pricing, e.g. Schmalenbarch's (1934) Selbstkostenrechnung und preispolitik (full-costing and price policy). Also note that the average cost is normally more reliable (fact based) than elasticity and marginal cost estimates.

In the cost-plus approach, price discretion is limited and in principle handled by the markup. Strategic and tactical considerations may be included in the "+" and partly also in the choice of allocation bases. This provides the actor, using a cost-plus pricing approach, a space for identifying (factual) possibilities of the organisational context. Taking a cost-plus approach also provides the actor with the possibility of including more values than profit maximation in the pricing activities. For instance, one value often associated with cost-plus pricing is stability (see e.g. Datar and Rajan, 2021). Marked fluctuations are often much higher than cost variations at the product level. Thus, pricing based on costs may reduce the variations in the bottom line for both: for the producer and the customer.

Stability may also be related to legitimacy and trust. Referring to costs or increasing costs, allows the actor to use reasoning when communicating price changes to (potential) customers. The price of a hotel room may serve as an example. Explaining a 20% increase in the price to a loyal customer by referring to increased inflation may be easier than explaining the increase by increased demand or reduced capacity in competing hotels. Thus, the communication around price changes may become more acceptable to the customer compared to changing prices driven by changes in supply and demand. This is more important when the actor has a close and a long-term relationship to the customer. Box 4 considers the cost-plus pricing approach in the MBA course example.

Box 4: The cost-plus approach in pricing an Executive MBA program.

In the MBA case, there may be some challenges in calculating the cost per participant. This involves allocating cost between programs and other activities and may also involve transfer pricing of auditoriums etc. However, advanced costing systems, like Activity Based Costing, may trace a significant amount of the costs to each program. One specific problem relates to the number of participants. Since some costs are driven by classes and programs, rather than number of participants, the average cost per participant increases when the number of participants decreases. This problem may be offset by using the cost of unused capacity from Activity Based Costing, or we may claim that the quality (and value) increases with lower number of participants. The cost-based approach may also give higher legitimacy. If more resources are spent on the program, the participant may accept a higher price, e.g. smaller groups and visiting highly prestigious universities abroad.

The reality construction in a typical cost-based pricing setting is very different from the economist approach. It may align facts, values, communication, and possibilities in long-term relations and in situations where trust is important. In the short term, opportunities for profit may be lost, but the relevance of cost-based pricing may be regained post Covid-19 and market turbulence driven by wars and conflicts. It may be seen as more reasonable to increase prices to cover for higher costs or to cover losses from Covid 19, than to increase prices driven by market conditions and increased demand driven by a war.

3.3 Competition-based pricing: creating space for cost improvements?

In this approach, companies collect competitor prices and simply make minor adjustments based on subjective judgments of differences in relative value. This is both simple and low risk. If we keep pricing our products at the same level as our competitors, we may keep our market share in a stable market. Thus, this approach is also called Market-based pricing or Share-driven pricing (Datar & Rajan, 2021; Nagle & Müller, 2018). Raju & Zhang (2010) claim that this is the second most popular price-setting approach, after cost-based pricing.

As for the cost-plus pricing approach, the pricing literature in marketing is also critical of the competition-based pricing approach (Nagle & Müller, 2018; Raju & Zhang, 2010). The main argument seems to be the lack of an active understanding of the customer and that, "[t]he worst risk is that competition-based pricing lulls the price setter into passivity" (Raju & Zhang, 2010, p. 6). In addition, this literature also claims that following a share-driven target may also lead to a downward price spiral that can hurt not only the company, but the industry. Specially, if the total demand is decreasing.

Costs seem to play a minor role when competition-based pricing is discussed in marketing literature (Nagle & Müller, 2018; Raju & Zhang, 2010). However, in the management accounting literature the competition-based pricing is more often linked to costs by associating it with the concept of 'Target costing' (see e.g. Datar & Rajan, 2021). In this literature competition-based pricing may lead to action rather than passivity, by making price an intentional target and a driver for cost improvements. A major motivation for target costing is the locked-in cost curve (see e.g. Datar & Rajan,

2021), i.e. that costs are locked in based on design decisions that are made before the production of the product or service.

3.3.1 Reality integration of the competition-based pricing approach

The reality dimensions of the competition-based pricing approach from a marketing and strategy-based view can be presented in a very simple way. Facts are competitors' prices, values are often to keep a certain volume or market-share, and possibilities are limited to increasing or decreasing volume using price as the main instrument. This approach is easy to communicate, since the driving argument is that we don't set the price, it is assumed to be given by the market. However, such assumption is too simplistic, as many companies do not know the market price of their product and/or services in practice, e.g. due to differentiation.

Turning to the management accounting perspective where market-based pricing is linked more with costs provides us with a more complex pricing approach than the marketing and strategy-based literature suggests. For example, in terms of facts, the company may have knowledge about the current production costs that can be compared with estimates of a future market price. To make design decisions at an early stage, the actors in the company may collect information on customer preferences and competitors' designs. This may provide a range of (factual) possibilities for the actors to implement cost reductions and cost/value-informed design decisions. As such, the focus of the company is not to increase prices but to identify possible ways for creating value-adding elements into or removing non-value-adding elements from their products and/or services. As such, like the cost-plus pricing approach, target costing is not a profit maximization technique. Rather, it aims at sustainable profit levels to survive in a competitive world. The main message of including target costing in the competition-based pricing approach is that changes and cost improvements are important for survival and that cross-functional teams are essential in making cost/value-informed design decisions. Thus, to succeed with such a pricing approach requires actors to have professional and communicative skills that allow them to identify (factual) possibilities of their pricing activities. Box 5 presents reflections on the competition-based approach in pricing the Executive MBA program.

Box 5: The competition-based approach in pricing the Executive MBA program.

In the MBA case, this approach simply means that the business school looks at websites for other institutions and sets the price equal to or close to other MBA programs. This passive price adopter approach to pricing may give a level of legitimacy to a state-owned business school. However, the competitor price may also be utilized actively to alter the design of the MBA program. If the price is too low to cover all costs, the school may use it as a driver for cost reductions as in target costing, e.g. by using less resources for supervision. If the price is significantly higher than average costs, the business school may increase the cost to increase quality, e.g. by increasing the number of hours of face-to-face interaction.

As for the cost-plus approach, we find that the pricing literature's critique of competition-based pricing is lacking important dimensions of an active actorship. In the case of competition-based pricing, it misses the link to cost improvements and locked-in costs. Rather than looking at the actor as a passive follower, we may see the competitor-based approach as a price lead, customer-focused, design-centered and cross-functional target costing approach (Bell & Ansari, 1997) that integrate facts, values, possibilities and communications based on a proactive use of future market prices for cost management.

3.4 Customer-based pricing: exploring the data and exploiting the customer?

Both the literature within marketing and economics are in search of the perfect price-discrimination, with individualized prices for segments or for even customers within segments (e.g. Nagle & Müller, 2018). In this approach there is little room for cost. At best, the marginal cost is included in the economist approach (as discussed earlier). To differentiate prices on customer level, we need data for identifying variations in price elasticity between customers. This process can either be driven by theory (assumed relationships) or data.

In a theory-driven or hypothesis-driven approach we assume that there are some observable properties that can identify differences in willingness to pay, i.e. age, location, or behavioral characteristics. By testing the price sensitivity of these properties, we may identify relationships that can be used in pricing products or services.

In the data-driven approach, big data sets are explored to predict correlations between price and a high number of different factors. In this case we are not assuming a relationship based on a theory between prices and these factors, but trust the relationships given by the data. For example, we may identify that men at the age of 58, driving a Tesla, are

less sensitive to price changes of their insurance on Fridays in late June. We don't exactly know why there is a relationship but may still use it when we want to change the prices.

In both cases, the customer-based pricing is data intensive, but not on cost information. That may explain the claim mentioned earlier that some firms have taken pricing authority away from financial managers and given it to sales or product managers (Nagle & Müller, 2018, p. 5), or in highly digitalized companies to the business analytics department (Andreassen, 2020).

3.4.1 Reality integration of the customer-based pricing approach

The underlying value of the customer-based pricing approach is to maximize profit through the possibility of exploiting the customer preferences. This infers that the actor engaging in pricing activities have a factual foundation on which s/he can set the 'optimal' price. However, the actor's knowledge about such facts is questionable. In many practice settings (e.g. small and medium-sized companies), the actor involved in pricing activities may have a qualified guess on what the customer is willing to pay. This guess may be based on his or her knowledge and experiences from interactions with the customer. However, translating this into complex data models to identify "optimal" price may be futile. For instance, such pricing models would most likely be challenged by contextual changes as the models typically builds on historical data which may be less relevant in a new setting. The Covid pandemic may be an example of historical data being less relevant. Another challenge is the increased awareness and actualization of data protection legislation. This also begs the question whether the activities that go into identifying the 'optimal' price are worth the costs. Thus, the factual possibilities of choosing and using a customer-based pricing approach is very dependent on the contextual situation. In addition, to implement individualized pricing, we need to make sure that the customers are not informed and/or understand the pricing practice. Thus, communication with customers should be blurred when it comes to how prices are set. It also helps if the products are not comparable between customers, e.g. complicated insurance products. One could imagine that such 'gaslighting' strategy may work in the short run but it can leave the organization engaging in such activities very vulnerable if a competitor chooses (and is able) to engage in more transparent pricing strategies. As such, since this paper assumes that both competitors and potential customers are also reflective actors, the price-setting actor aiming to exploit the customer may run the risk of damaging the long-run profit of the company. Box 6 below provides reflections on the customer-based approach in pricing an MBA program.

Box 6: The customer-based approach in pricing an Executive MBA program.

In the MBA program it is difficult to fully individualize prices. In some cases, the business school may negotiate discounts or differentiate prices based on employer data. The use of "early bird" discount is another example. However, there is a high risk of this becoming transparent during the program, which may lead to tensions and may have negative effects on the satisfaction of the participants, as well as the reputation of the business school.

The customer-based approach to pricing may capitalize heavily on machine learning and big data sets. Combined with both blurry products and prices, it may set individualized prices that reflect the customers willingness to pay at a certain point of time. Exploring variations in demand and how these variations correlate with customers and customer behavior, may increase profitability significantly. The outsourcing of pricing decisions to algorithms may also provide room for excuses. But it comes with a cost. First of all, the organization may lose its fundamental understanding of customer preferences, since the learning is left to correlations identified by exploring data, not to a reflective interaction with the customer. Second, and even more importantly, blindly exploiting customers may create tensions with both customers and employees. However, understanding customer preferences may be very important, especially in a B2B setting. Such knowledge may be utilized to increase value creation for both the customer and the company.

4 Concluding discussion

Table 1 below sums up some of the differences based on the four reality dimensions from the pragmatic constructivist approach. First, it illustrates the relevance and usefulness of these dimensions to understand the different approaches to pricing. Second it highlights important differences between the approaches. It is important to note that this is our interpretation of how reality is constructed in the different approaches. Others may have alternative views. However, our interpretation is informed by the marketing and economics-based pricing literature. In this literature, cost-plus pricing and competitor-based pricing seem to be downgraded. Since these are the two most used approaches in practice, this is also a downgrading of practice. We think this is unfortunate and represents a too simplistic view of how companies set their prices. We also believe that advanced practitioners are able to integrate reflections on customers, costs and competitors when setting their prices. Such integration requires the price-setting actor to develop complex sets

of cognitive skills. Actors focusing on only one of the approaches may become blindsided and end up with dysfunctional practices.

The same holds for communication and interaction with customers. Trust, stability, and sustainable profit are important values, that may be communicated to the customers through costs and open books. We do not think this is going to be less important in the future.

Table 1: Summary of the four pricing approaches relation to the four reality dimensions.

	Reality dimension				
	Facts	Values	Possibilities	Communication	
Pricing approach	Economist pricing	Marginal cost and price elasticity	Profit maximization	Formula defines the optimal price	No explicit communication necessary
	Cost-plus pricing	Cost per unit	Stability, sustainable profit, trust	Limited, markup and cost allocations	Cost changes legitimize price adjustments - transparency
	Competitor-based (Target Costing) pricing	Costs and (future) market price	Sustainable (justifiable) profit level	Cost reductions (or increases) in design and processes	Importance of improvements to stay in business
	Customer-based pricing	Big Data, structured or unstructured	Profit maximization	Exploiting opportunities for price differentiation	Blurry prices and products

We conclude this paper with suggesting that future research on pricing may benefit from taking a pragmatic constructivist approach to empirically explore how actors in various practice contexts may draw on different facts, possibilities, values, and communication when engaging in pricing activities. The PC approach could provide deeper insight into pricing in practice that potentially could allow for improved and more advanced pricing conceptualisations. This paper has mainly focused on some broad reflections on PC's concept of reality integration to illustrate the potential for advancing our understanding of how pricing is done in practice and how it may be improved. However, many more concepts from the PC paradigm could be explored in relation to pricing. Some specific examples could include the exploring of co-authorship in pricing in an open-book accounting context, the learning theory of truth (pro-active truth and pragmatic truth) in a longitudinal case-study design on pricing in a specific practice context, how practitioners may draw on various instrumental and basic values when engaging in pricing activities or how language games between different actors involved in pricing activities may play out. Many other types of PC studies in pricing could be added to these examples. As such, the PC paradigm provides many possibilities for making more in-depth studies of pricing in practice. This may allow researchers to develop more novel and more practice-informed conceptualisations of pricing approaches.

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