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# Perceived value and psychological thresholds: implications for marketing

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## Keywords

Decision making,  
Consumer behaviour, Marketing

## Abstract

Individual decisions fall in the broad categories of instinctive, automatic, intuitive, deliberate, and impulsive. Decisions may be conscious, pre-conscious, or unconscious. These broad categorizations serve as background for the thrust of this paper. Decisions occur if certain forces exceed a threshold. This paper centers on issues related to action thresholds in the context of marketing. The approach characterizes decision space of an individual in the context of multidimensional utility-psychic space. Variables of different characteristics influence decision space and thresholds. Asserts that variables of influence in the psychic region of the mind play an especially important role in this decision space and in marketing. Offers a conceptual background on this decision space and thresholds and focuses on implications for marketing.

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## Introduction

An individual makes a decision for a variety of reasons. This paper characterizes the decision to buy or not buy a service or product in terms of an action threshold. This threshold exists in a multi-variate space.

In the model offered, an individual makes a purchase/no purchase decision at a moment in time based on the relationship of the perceived value of the product at a point in time relative to the action threshold. This paper:

- describes an individual consumer in the context of this decision space;
- characterizes an action threshold in decision space;
- identifies variables that affect this threshold;
- relates a customer's perceptions of the value of a product or service to this threshold;
- defines the specific circumstance under which an individual will act and buy the product or service;
- examines how one can alter consumer behavior in decision space;
- identifies some variables of influence if one desires to prompt a customer to buy a service or product;
- sketches the implications of thresholds and decision space;
- describes special scenarios that may exist in emerging and transition economies that may result in unusual and intriguing demand scenarios; and
- suggests additional research efforts relating to action thresholds and closes with a summary.

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## Background

We acknowledge that numerous researchers have made valuable contributions in marketing, psychology, decision sciences, and

related fields that support the notions in this paper. Collectively, their work stimulated many thoughts and prompted this paper. Several concepts and relations directly related to this paper include perceived value and the role of different variables in the perception of value and decision making. A review of germane issues supports the discussion.

## Perceived value

Groth (1994) addresses the notion of perceived value of a product by a customer and the relationship of variables in multidimensional space to a summary perceived value vector for a customer, for a product, at a point in time. He also characterizes an action threshold for decision making by a customer and relates the summary vector of perceived value to this threshold.

A sketch of some relationships supports the thrust of this effort. The detailed background is not essential to grasp the notions offered in this paper. Figure 1 depicts a sample summary vector of perceived value for an individual with respect to a product at a point in time.

At a moment in time for a customer with respect to a product or service:

- In multidimensional non-linear space (MDS), conscious, pre-conscious, and unconscious variables of influence aggregate to a perceived value[1].
- The model dichotomizes the variables in MDS as utilitarian or psychic in nature. His model then separates psychic factors into internal and external categories.
- The model defines variables and their resulting contribution to perceived value (PV) as the vector sum of summary external or internal vectors.
- External variables capture the influence of extant factors on the weighting of the variable (interaction effects resulting

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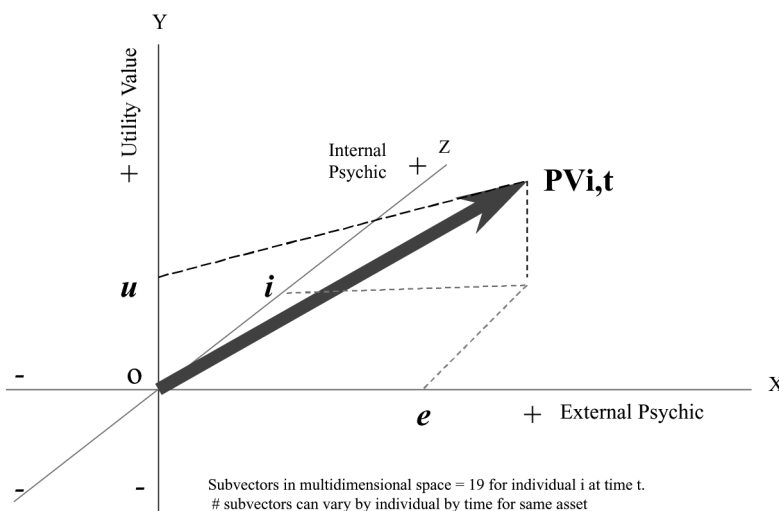
- from interaction with other people, advertising, perceptions of how others view them, and similar factors of influence) that yields external factors.
- Internal variables capture influences resulting from other than external forces. Factors stemming from feelings, emotions, mood effects are internal[2]. For example, a feeling of self worth, or entitlement, or “I deserve” illustrate internal variable effects.
- A summary vector ( $PV_{i,t}$ ) that reflects the combined effects of the psychic external, internal, and utility effect vectors depicts perceived value in a three-dimensional space at a point in time for a product or service.
- The length of the summary vector indicates perceived value.
- The figure depicts only one  $PV_{i,t}$ . Shortly, we will examine three  $PV_{i,t}$  vectors for the same person, same product, at different points in time. The perceived value vector varies with time in orientation and length for the same product/service. This change in the vector orientation and length occurs as the individual comes to different conclusions about perceived value at different points in time.

## Thresholds and relationships

### Threshold

An “action threshold” (AT) with respect to the purchase decision of a product exists for a person at a point in time. Several AT model variants are possible. The AT in this model captures all factors including financial ability (including credit availability) to purchase.

**Figure 1**  
 Utility and psychic space and perceived value vector



With this model an irregular surface depicts the action threshold relative to the perceived value vector[3]. To simplify the exhibit, Figure 2 shows only a segment of the full AT for an individual for product 1.

The following summary comments characterize the action threshold and related issues:

- The threshold is not uniform or concentric about the origin. Think of the AT as irregular in shape – perhaps like the surface of an irregular shaped potato.
- For the same person with respect to the same product, the action threshold surface may vary in shape with time. The shape varies as a result of different weighting and potentially different variables influencing perceived value at the alternative time.
- The AT for a competing product/service can be different at the same point in time. For example, the customer may enjoy brand recognition and experience with the competing product. Variables such as perceived risk of satisfaction may result in a barrier closer to the origin for the competing product. Variables are also likely to affect the  $PV_{i,t}$  for the competing product.
- Recall that the perceived value is captured in the length of the  $PV_{i,t}$  vector.
- The distance between the end of the  $PV_{i,t}$  vector and the threshold represents the *decision gap*. A purchase decision requires the removal of this gap.
- $PV_{i,t}$  vector penetration of the threshold causes the person to buy. Since this version of the model includes ability to pay, penetration – however slight – results in a decision to purchase.
- The length of penetration of the  $PV_{i,t}$  beyond the AT determines the maximum price the customer will pay at a point in time. We term this degree of AT penetration (DATP). The offered price relative to the price associated with DATP is important in pricing strategy.
- Penetration may also affect the customer’s perception of value received. In this model, higher penetration corresponds with greater satisfaction with attendant implications such as repeat business, dissemination of customer satisfaction, cross-customer influence, and leader-follower behavior.
- The degree of AT penetration is important if circumstances allow differential pricing or segment pricing. DATP is likely to have particular importance in certain economies. We offer speculations on this later in the paper.

- At a point in time, an AT exists in the market segment for each potential customer. This array of AST represents a distribution of potential decision makers. The nature of this distribution has implications in terms of pricing strategy, advertising, new product development, and other elements of strategy.
- Estimation of AST across target markets and DATP offers potential in a variety of areas aside from the sale of “normal” products/services. Estimations of the distribution of AST for people and DATP offer merit in the pricing of initial offerings of financial securities, in setting opening prices at open auction, and in making decisions such as the choice of a “Dutch” versus straight auction.
- To the extent price is a variable of influence in the decision, the PVi and price relative to the AT is the *critical price*. Recall that in this model price is a contributing variable to perceived value. Hence, a price at or below the critical price will prompt a sale. We defer details on many implications of this model to another paper. However, summary comments on factors related to pricing issues aid in understanding the model and illuminate the model’s importance.
- *Minimum trigger price* represents the highest offered price that will still result in a sale for this particular customer at this point in time.
- *Error price* is the offered price below the minimum trigger price.
- *Missed sale price* is the offered price above the minimum trigger price. No sale occurs.
- *Missed opportunity margin* is the difference between the minimum trigger

price and the missed sale price. The missed opportunity margin is positive if variable costs of the product/service are less than the minimum trigger price. It is negative if variable costs exceed the minimum trigger price[4].

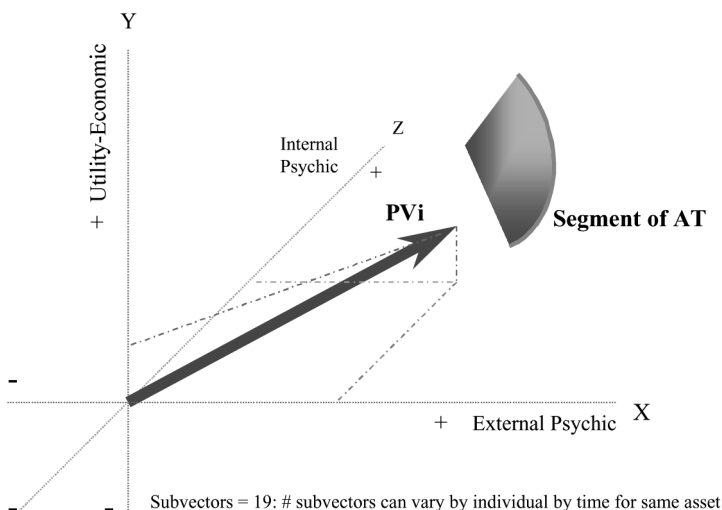
- *Missed actual contribution margin* is the difference between the minimum trigger price and the lower error price. This margin is positive if the offered price is above the variable costs of the product/service.

Figure 3 portrays perceived values and segments of the action threshold at three different points in time for the same product, same customer.

Comments on the action threshold surface and the three AT segments shown in Figure 3 include:

- The three PVis exist at three different points in time. The PVis vary with time because of the change in variables and weighting of those variables that result in the summary PVis.
- The total or at least parts of the AT surface varies with time. The three segments of the AT surfaces shown are time dependent to the corresponding PVis. Note that these PVi vectors and AT segments are all for the same person, same product, but at different points in time[5].
- At time  $t = y$  the individual arrived at a PVi vector oriented more towards the utility features of the product. The PVi vector is shorter compared to times  $t = t$  and  $t = x$ . Similarly, at times  $t$  and  $x$ , the relative importance of utility and psychic vectors and weighting of variables results in the corresponding PVi. Notice that at time  $t$ , we arbitrarily assume 19 subvectors contributed to the PVi. At other points in time, the number, composition, and weighting of variables may change.
- At time  $t = t$ , the potential price the customer will pay is greater than at  $t = x$ . At  $t = x$ , it is greater than at  $t = y$ .
- Often the orientation of the PVi to psychic space results in a longer PVi reflecting the increment in perceived value above pure utility value added as a result of psychic factors. The pen with the trademark special white star on its cap serves as a classic example of psychic additions. Pens that write equally well (pure economic utility) sell for as little as pennies compared to thousands of dollars.
- Observe that the distance from the origin to the ATs varies at the different points in time.

**Figure 2**  
 Perceived value vector and action threshold



- Notice that the distance from the end of the PVi vectors to the corresponding AT or decision gap is different for each time.
- The opportunity to prompt a purchase by eliminating the gap and causing AT penetration differs for the three different times. That ability rests on success at orientating the customer in decision space, influencing variable and variable weighting, and causing AT penetration.

- lengthen PVi and bring in the AT. This results in sale at a potentially higher price. The greater degree of penetration favorably affects customer satisfaction. Letting the customer pay more and being happier in the process is attractive;
- lengthen PVi and move the AT out – but still achieve perforation of the AT. The intent to create scarcity and exclusivity may prompt this approach.

### Threshold and decision space

For simplification, the discussion proceeds focusing on an individual and holding time constant. Let us return to the simpler Figure 2.

#### Buy-reject decision

A perceived value vector that pierces the AT results in a purchase decision. The situation in Figure 2 is a no sale condition. A decision gap between the end of the vector and action threshold exists. Causing a sale requires gap removal and penetration of the AT. Gap removal will result from:

- 1 *Altering the action threshold.* Moving the AT to achieve penetration is one scenario – but not the favored choice. Prompting a sale this way results in a sale at a price associated with the current PVi,t.
- 2 *Lengthening the PVi.* Increasing PVi length to pierce the AT by affecting the variables that influence the customer’s perception of value yields a sale. This sale occurs at a higher price.
- 3 *A combination of altering the AT and the PVi.* Several possibilities exist:

### Variables and action threshold

Potentially changing the location of the segment of the threshold that coincides with the current perceived value vector, PVi,t holds interest since it is one way to possibly trigger a sale. Figure 4 shows a change in the action threshold. In this instance, for simplicity and to focus on AT shifts, we have kept the perceived value constant.

In Figure 4, no sale occurred with the old AT. The movement of the AT results in penetration price triggering, and the customer purchases. Note that since we kept the PVi constant, the sale resulted from a shift in the barrier – not from a lowering of the price.

Several factors might cause a shift in location of the AT, we offer some examples:

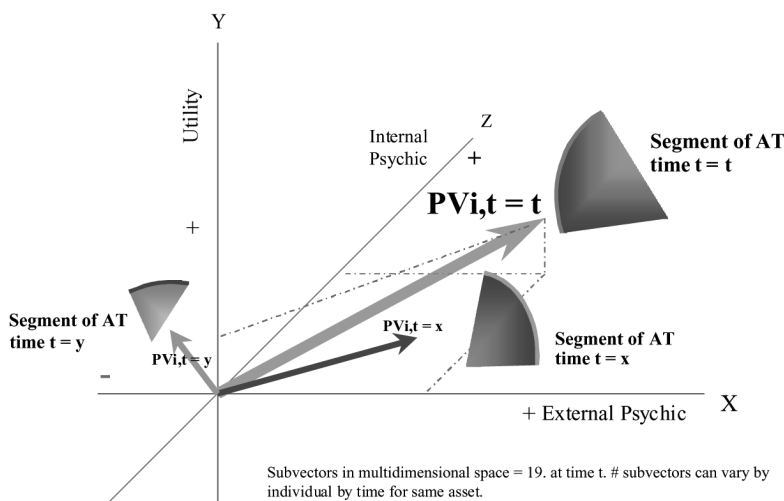
- Removing inhibitors or barriers to making a purchase decision. “Some worry whether this will fit their unit. This comes with a universal adapter so that it will fit all units. If you are not happy, we will pick up the unit and give you a full refund” (see, for example Groth, 1994b).
- Demonstrating ability. “Under the payment scheme offered, the purchase becomes affordable to most.”
- Altering psychic factors or influence. “Some find that purchasing a distinctive and durable ... that will remain in the family as a heirloom provides satisfaction and serves as an anchor for family memories ...”

### Variables and PVi vector

Figure 4 is a simplification. Figure 5 shows the joint movement of the AT and the change in the perceived value to a new PVi. The complexity of variables that influence human mind state and potential behavior likely yield changes in both the PVi and ATi.

Notice in Figure 5 that the greatest proportion of the change in the PVi stems from psychic factors as indicated by the small contribution with respect the utility axis. Both added external and internal psychic factors contributed to the change in PVi.

**Figure 3**  
 Action threshold (AT) segments and perceived value vectors (PVs)



Note: Segments of AT shown are all for person i at different times t,x,y for same product

The new PVi would have been sufficient to stimulate the purchase since it pierces the old AT. However, the new AT results in a greater degree of AT penetration. As described earlier, in some instances this may result in benefits to the customer and to the selling agent. The decision to focus on altering the AT, the PVi, or both rests on examination of a host of issues. Rather than asking the reader to endure more today, we defer this discussion to another occasion.

**Psychic and utility factor variables**

Change in the position of the AT and/or altering the PVi results from influencing

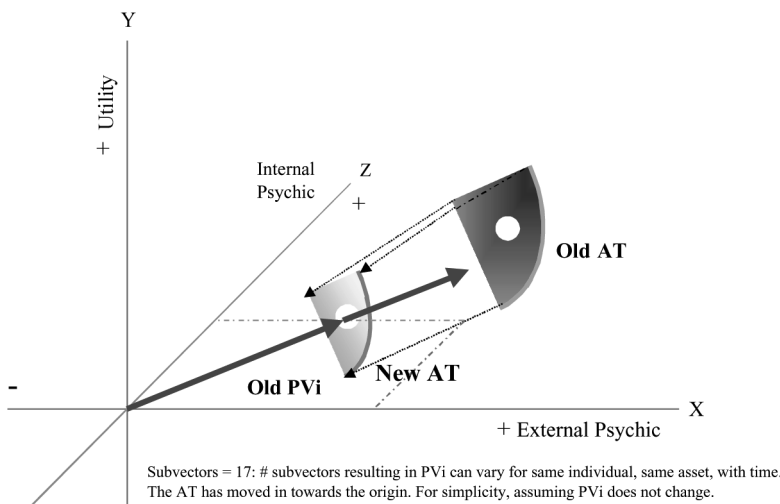
utility and psychic variables (which variables and their weighting) included in the perception of value and in the positioning of the AT.

Variable inclusion results from increasing the factors (product attributes, needs assessment, needs match, alternatives, elements of circumstance, ...) the customer considers at a point in time. We do recognize that including too many variables in the process can diminish perceived value and/or increase the gap. Critical factors also affect the weighting of variables in the process (see Dyer and Groth, n.d.).

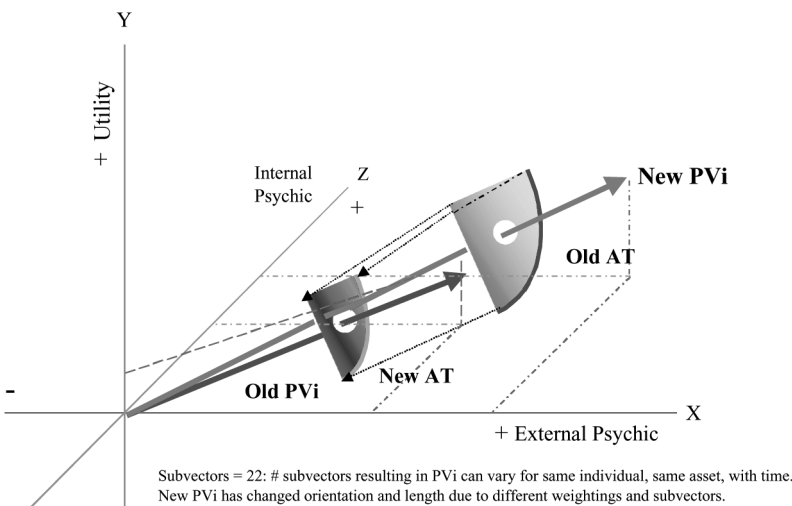
The weighting of variables results from the conscious and unconscious influence the variables have in the customer's mind given mind state. Pointing out the attributes of a safe child seat for the car and the seats importance can vary greatly by circumstance.

- *Scenario A.* A young couple expecting their first child is shopping for a seat. Variables affecting PVi are not yet well defined. AT is relatively far from the origin since they do not need the seat yet.
- *Scenario B.* A young couple carrying their eleven-month-old baby is shopping for a better quality, approved seat to replace the one they have. Variables affecting PVi become clearly defined, e.g. want seat approved by testing agent and recommended by their insurance company. This brings AT closer to the origin. They want it now and barriers to its purchase are nearly non-existent except, e.g. in stock, price, and desired color.
- *Scenario C.* Same as B except, the child of a friend suffered severe injuries on Thursday in an accident. PVi rises even though the probability and "expected chance" of an accident has not changed since Wednesday. AT becomes pierced. They will buy a seat, even if it is not the choice of color.

**Figure 4**  
 Change in action threshold



**Figure 5**  
 Change in threshold and perceived value vector



In these scenarios, the variables and weighting are different. In C, undoubtedly fear, responsibility as a parent, compassion for their friends' baby, and other variables of mood, feeling, and emotion play a greater role in the formation of PVi and the AT.

**Removal of barriers or inhibitors**

An example of interaction with the customer serves as an efficient way to illustrate potential psychic variables that alter the position of the AT segment. At the same time, psychic factors may also alter the perceived value.

The discriminating buyer recognizes not only the quality and value of the product, but also the importance in business of image.

Although quality of a product can affect its utility, the emphasis in this salesperson is on psychic variables, both internal and external. She took this approach with the customer since she sensed that external and internal psychic factors contributed most to the customer's perceived value of the product.

Consider another scenario: a scientist is considering an expensive piece of laboratory test equipment. The salesperson recognizes that the customer's focus is on utility (not the example in Figure 4).

Dr Upton, you have recognized all the features in the XLC7000 except for one that is important for a person with a high opportunity cost on time. Unlike other models on the market, the XLC7000 automatically recalibrates itself after each sample and gives you a confirmation of calibration before it will allow introduction of the new sample.

Piercing the threshold with or without movement of the AT surface may result from:

- Moving the customer in mental space to another orientation of the PVi vector. In Figure 3, focusing on the identifiable utility factors of the product and the match of product to customer need might alter the customer's  $PVi,t$  at time  $t$  to the new  $PVi,t$  time =  $y$ . This orientation results in a shorter gap. The salesperson might be able to close this gap more easily than the gap that existed at time  $t = t$ . Assume the sale is profitable at the price that corresponds to time  $t = y$ . A sale at this price might be better than no sale at time  $t = t$  or  $t = x$  if gap closure was not possible with these orientations.
- Altering the location of the AT. Consider time  $t = t$  in Figure 3. Suppose the salesperson was not successful at increasing  $PVi,t$ . Moving the AT in to cause penetration is necessary. Perhaps he might point out this is the last day of the month and makes an honest admission, he needs to make the sale to get closer to his bonus. Second, he wants the customer happy and to keep him/her as a future customer. He offers an extra 5 percent discount for cash. The customer buys. Interestingly, the terms of the transaction action may – for psychic reasons – cause the customer to increase  $PVi$  as well as realized satisfaction.

### Additional research

Several additional research topics include:

- Critical variables, e.g. perceived risk of service quality, that affect the location of ATs.
- Influence of perceived risk on the AT.

- Consumer confidence levels and AT position.
- External vs. internal psychic weighting for services vs. products.
- AT characteristics for product vs. service purchase.
- Techniques to identify market segments that have similar ATs.
- Critical influence variables for market segments.
- Identification of the distribution of ATs for a product in an economy and corresponding pricing strategies to optimize economic contribution margin.
- Pricing strategies and contribution margin segments of the market.
- Estimating the distribution of ATs of investors for an initial public offering.
- Managing risk of sale and customer retention through AT modification, e.g. altering and then keeping the AT closer to the origin than the ATs of competing products/services.
- AT factors of influence and implications for advertising.
- Training in psychology for point of sale.

### Implications

A better understanding of thresholds to decision making and perceived value of a product/service are important in marketing. We argue the benefits of increased understanding extend beyond (or from) marketing to other arenas. The role of psychic-utility factors in behavior is of a broader interest. People savagely fight wars and kill each other for psychic factors although – generally – the utility and expected value of wars to the population is low or negative. Nevertheless, at this stage we focus on direct implications to marketing.

- Differences in AT penetration across individuals have profound implications for differential pricing. For example, the same price for all can yield a considerably different total contribution margin compared to differential pricing. The sale of seats on airlines represents an example.
- Advertising seeks to influence people. The relationships between product attributes, perceived value, and action thresholds vary across products/services and people. Advertising to influence men in the choice of a hair-coloring product is considerably different than attempts at influencing the choice and purchase of a push lawn mower.
- The relationships between PVis and ATs such as degree of penetration, market segmentation by AT, and gaps are

important in the contest of customer satisfaction, brand identification and loyalty, gaining increments to market share, and other key issues in marketing.

- Since this model captures ability to purchase in the AT for individuals, pricing that affects the threshold for a large segment of the population can have a profound impact on product demand. Shortly, we will briefly address this issue in the international context.
- Increasing the length of the PVi vector supports higher price per unit sold. It may also lead to greater need fulfillment. Elsewhere, researchers have addressed the notion of equating need realization and satisfaction with the ability to pay a higher rather than a lower price for a product. Others have also noted that in some markets for some types of products, customers equate paying more with quality.
- ATs in lesser developed, emerging, and transition economies likely take on special import because of what one of the authors terms discontinuous demand functions. In these economies, basic needs are great for masses of people. Ability to pay in these economies for need fulfillment has profound implications. The relationships between PVis and ATs in these economies are of import in the social context, i.e. improving the standard of living. Profound implications also derive from the relationship between resource allocation, utilization, and value creation for the economy and production agents.

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### **International implications**

The perceived value of products as well as the thresholds for action will vary by economy and by individual consumer circumstance. The concepts and notions have special implications for lesser-developed, emerging, and transition economies. In these regions, a large proportion of the population endures a low standard of living.

The author addresses relationships, economic factors, and critical aspects of marketing for emerging and transition economies elsewhere (Groth (n.d.)).

Some special circumstances and relationships warrant brief comment. These topics remain the subject of future research efforts.

### **Discontinuous demand functions**

In sub, subsistence level, and developing economies we hypothesize the existence of discontinuous demand functions for products. These discontinuities will be most

prevalent for certain “low price” consumer products. These discontinuities:

- Occur at breakpoints in pricing, at prices that we call critical prices.
- In these economies, the needs in terms of basic survival and achieving a minimal standard of living are great. Products/ services in these economies fall into categories according to the nature of variables that contribute to perceived values. The choice of products to offer within such economies and the importance of ATs versus PVis to stimulate sales has many implications, e.g. with respect to advertising.
- Since our model captures ability to pay, in these economies, altering the ATs is more essential than attempting to increase perceived value of a product. If a mother holds a hungry or sick child and has great needs, attempts to identify needs are wasted. Moving the action threshold (e.g. more efficient manufacturing that allows a lowering of price) is more fruitful. Allowing need fulfillment and in turn making an economic return conforms to the social test of using resources to improve the life of others. Nevertheless, it is still important to assist the customer in recognizing relative perceived value of the product compared to a competitors.
- Reaching a breakpoint results in jumps in demand.
- Some instances will allow quantum price decreases, while at the same time yield increased economic profits.
- Allow jumps in the standard of living.
- Will promote increased efficiency in the use of resources.
- Result in the increase in economic value for companies as a result of increased need fulfillment for members of society[6].
- Affect a variety of economic variables in an economy.

### **Advertising variables**

Discontinuous demand functions will alter critical variables in advertising. For some products in some market scenarios:

- “Critical price” will alter the variables of import in advertising.
- “Free advertising” from consumers will increase, reduce, and conceivably even displace the need for funded advertising.

### **Development of an economy**

Marketing has an important influence on the perception and realization of needs. Those who enhance the efficiency of production and deliver products that enhance need fulfillment can generate economic value for the company and the economy. At the same

time, favorably influencing these relationships between consumers and providers of products and services has profound effects on the development of an economy. The potential effects include:

- enhancing the standard of living;
- lowering the political risk within the economy;
- capital formation and retention within an economy;
- increasing the availability and retention of capital within the economy;
- reducing the cost of capital – the extent producing agents decrease prices in reduction in response to lower capital costs, favorable feedback effects result.

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### Summary

The article reviewed background concepts related to perceived values and the representation of the perceived value of a product with a perceived value vector. Next, it introduced the concept of action thresholds in a multidimensional space. The model represents with a surface the action threshold possibilities for a person and for a product at a point of time. This surface has a specific orientation in perceived value space.

The article presented basic relationships between the perceived value vector and the action threshold. The discussion then advanced the notions of altering the action threshold and/or the perceived value vector if relative to the action threshold to prompt a buy decision. It identified several important implications for marketing.

The article also suggests that action thresholds are especially important in emerging and transition economies. In these economies, relatively large numbers of individuals may exist that have nearly common thresholds. Second, in these economies, the price offered likely has disproportionate weighting on the action threshold.

The article speculates that the grouping of individuals by thresholds takes on special import in developing economies. The author asserts that discontinuous demand functions exist in certain economies for certain types of products. In these environments, the author speculates market segments' action thresholds are anchored to critical prices. Lowering price to these points will trigger jumps in demand.

Several future topics for research are suggested.

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### Notes

- 1 Pre-conscious implies the person eventually is conscious of the variable and its influence.

- 2 The author recognizes that the summation of experiences as well as a host of other factors – undoubtedly including inherited factors – do influence and affect mood, feelings, and emotions. Variables are internal in nature if they: stem from the “resident effects” of mind state that include past experiences; do not enjoy current influence from interactive effects with extant forces.
- 3 The metrics in this multidimensional space and the location of the origin of the axis within the volume enclosed by the action threshold surface remain the subject of a future paper.
- 4 The author defers the discussion of economic contribution margins to another occasion. The intuitive notion is that in a value generating enterprise and value generating economy, generally we want to sell products/services only if we create value for the customer, the company, and the economy. These summary comments relate to economic relationships that support pricing decisions and the decision to sell or not sell a product.
- 5 A future paper will focus on determining and employing factors of influence to affect customer perception of product value.
- 6 For a discussion of the value generating cycle for a company and the aggregate cycle for an economy and the notion of social market efficiency, see Byers and Groth (n.d.).

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