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**THE ADOPTION PROCESS:
THEORY OR CONJECTURE**

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The Adoption Process: Theory or Conjecture

Abstract

The term 'theory' is often used with little regard for its precise definition. Within the discipline of marketing the term 'theory' is often applied to the concept of the adoption process. However, the validity of terming this concept a theory has not been rigorously tested. This paper addresses this issue by applying metatheoretical evaluation criteria to the adoption process. The objective of the paper was twofold. The first objective was to outline a theory formalisation framework and to detail the criteria any proposed theory must meet prior to an attempt to fully formalise that theory. The second objective of the paper was to use a selection of evaluative criteria and apply this to the adoption process. This paper identifies the adoption process as weak in many areas of the evaluative criteria and, accordingly, it is concluded to have limited validity as a theoretical construct.

Introduction

The term theory is often used inaccurately. As Rudner (1966, p.10) notes

...there are few terms of the scientific lexicon whose use, both by scientists and non scientists, has remained for so long in so anarchic state as has the term "theory".

Marketing practitioners contribute to this situation by assigning the term theory to conceptual constructs that have little theoretical basis (Hunt, 1991). Further, theories are not often evaluated with any form of metatheory criteria to assess the validity of them being labelled the term 'theory'.

The concept of the adoption process is generally accepted as a theory in marketing. The majority of marketing texts suggest that this concept has explanatory and predictive powers. However, there is seldom discussion or studies that specifically address the question of whether this accepted theory meets the actual criteria of a theory.

Accordingly, there is a need to develop a theory building approach in marketing that facilitates the testing of concepts which might be regarded as theories. A rigorous

approach will ensure that marketing concepts will contain both explanatory and predictive powers.

The term 'theory' is a much abused term in all business disciplines, including marketing. Often the term is applied to concepts that do not have explanatory or predictive powers. In addition, the pragmatic requirements of marketing often leads to this term being dismissed as inappropriate for marketing practitioners (Hunt, 1991).

However, in order for a theory to contain valid explanatory and predictive powers, it must meet certain criteria, otherwise it is little more than an educated guess at future events. Accordingly, Hunt (1991) suggests that some type of formalisation process is required when evaluating theories. However, it is pertinent to note that full formalisation may prove impossible. This can be evidenced by the fact that few theories within the natural sciences have yet to be fully formalised (Hunt, 1991).

The adoption process will be tested against a combination of Hunt (1991) and Sheth, Gardner and Garret's (1988) metatheory evaluation criteria to discover whether it does, indeed, deserve the right to be called a theory.

Definitions

There are a number of definitions which are central to this discussion. Indeed, a definition of theory is crucial. While much discussion has taken place concerning the most appropriate definition of theory, Rudner's (1966) definition is considered both concise and appropriate for this discussion. While it is acknowledged that it might be a simplistic definition, it does provide a solid foundation from which to begin.

Theory

...a systematically related set of statements, including some lawlike generalisations, that is empirically testable.' (Rudner, 1966 :10).

While the adoption process has been developed from the concepts of the diffusion of innovations, specific definitions have arisen in respect of the adoption process. The adoption process is a series of actions and decisions taken by the individual relating to

an innovation (Rogers, 1983). As this paper focuses on marketing, the definition of the adoption process will reflect this position and it will be wholly related to marketing.

Adoption process

The stages through which an individual consumer passes in arriving at a decision to try (or not try), to continue using (or discontinue using) a new product. (Schiffman & Kanuk 1991, : 649).

The stages referred to in this definition will be discussed later in this paper. Also it will be demonstrated that there is disagreement over the exact number of stages a consumer passes through, and various definitions of some stages. In addition, the definition of new product, and what it encompasses, will also be addressed below. Again, this is because there is disagreement in the defining of the term.

Limitations

The choice of any metatheoretical evaluation criteria is a subjective decision. It should be acknowledged that there are numerous other approaches for assessing the validity of a theory. In addition, the supposed adherence to the chosen criteria will also be inherently biased. The level of adherence will be determined by the judgement of the reviewer and that reviewer's interpretation of the requirements to fulfil that criteria.

While these limitations are noted, it is essential that a form of theory testing take place on marketing concepts that are termed theories. This is because without the testing of a theory the usefulness of that theory will remain questionable. Although this approach is subjective, nevertheless it is an attempt to validate or invalidate a concept assumed to be a theory. It should serve as both a reminder and incentive for other researchers and practitioners to apply some form of metatheoretical evaluative tests on those concepts believed to constitute theories.

The Adoption Process

This section will outline the development of the concept of the adoption process and detail the various models that have been proposed.

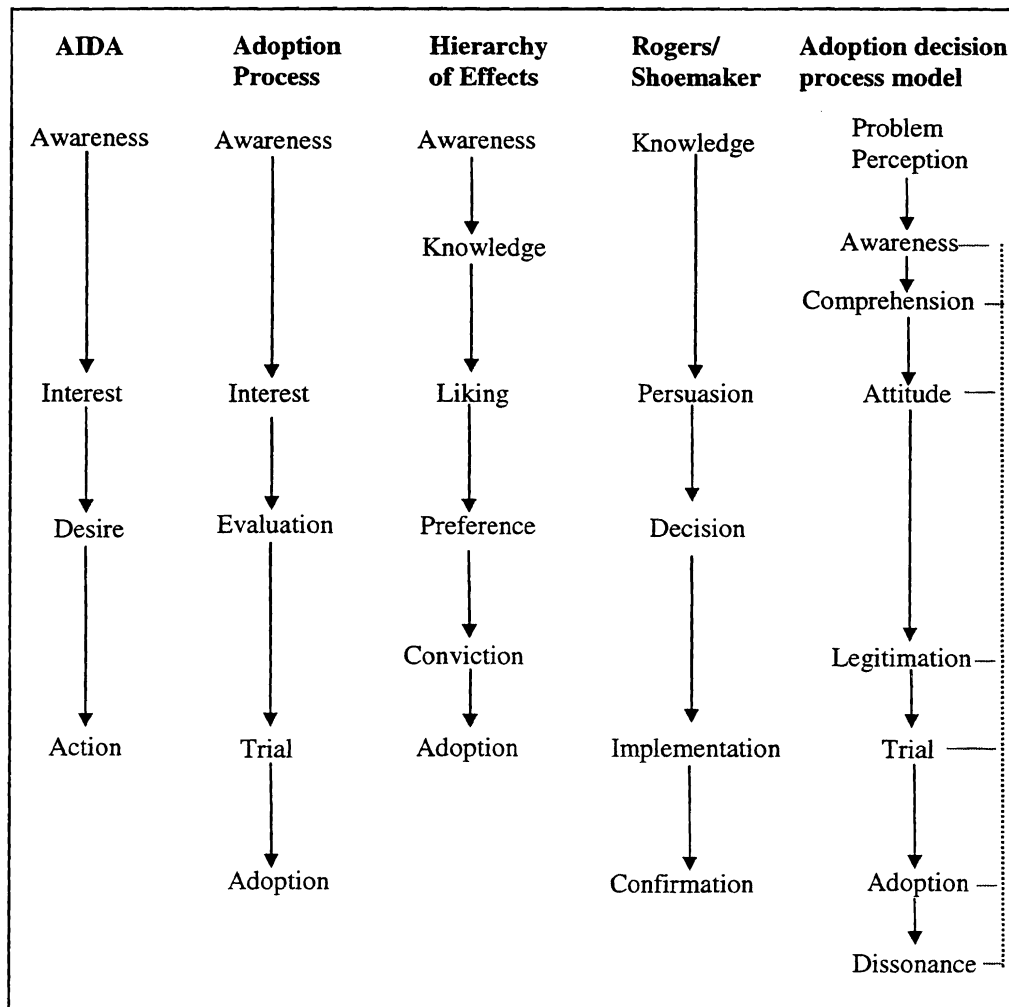
History

The concept of the adoption process has developed from the diffusion of innovations theory (Sheth, Gardner & Garrett, 1988). Within the diffusion of innovations theory, there was a recognition that consumers go through some form of process in reaching a decision to adopt an innovation. Rogers (1983) termed this process the innovation-decision process. Many of the adoption process models within consumer behaviour have originated from this 'diffusion of innovations' theory (Robertson, 1974). In the adoption of a new product, individual consumers go through an attitude change (Bourne, 1959) and in doing so will go through various stages. This action is known as the adoption process model.

Adoption Process Models

There are a number of proposed models of the adoption process. A number of these differing models are contained in figure 1.

FIGURE 1 : Models of the Adoption Process



Source: Adapted from Antil, 1988

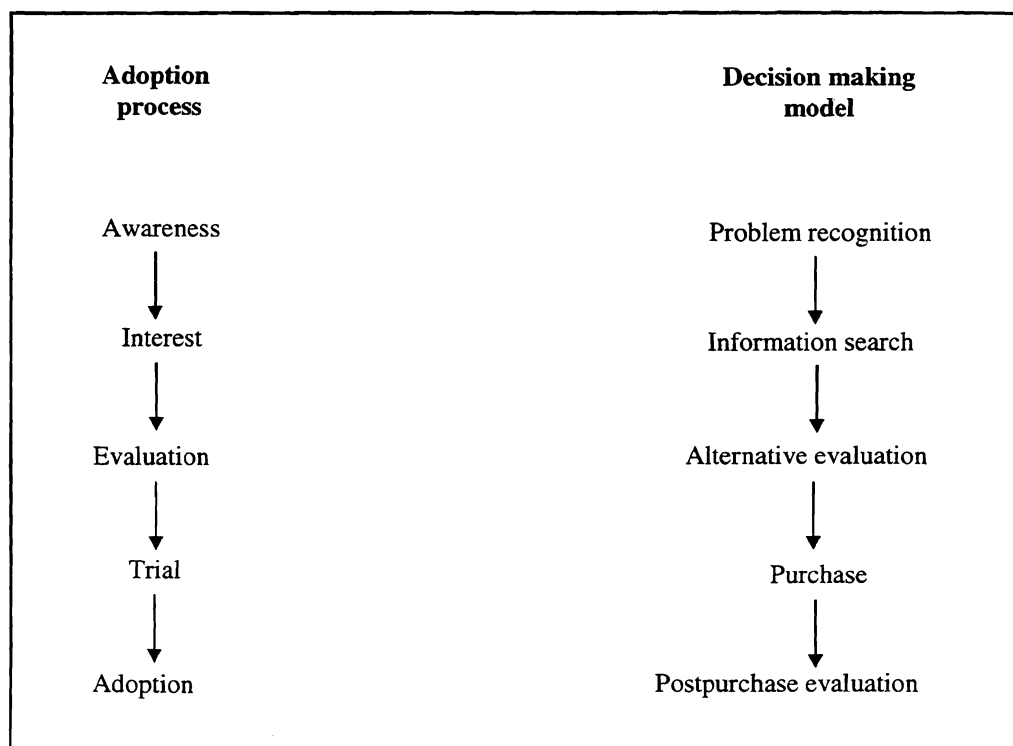
AIDA model

The AIDA model was originally formulated to relate to personal selling. To achieve consumer responses, three stages have been identified: attention; comprehension; and acceptance. Accordingly, the steps in this model are: to create awareness; to achieve a level of interest; to ensure the consumer attains a desire; and finally to achieve an action (Robertson, 1974).

The adoption process

The adoption process can be seen as a modification of the decision making model for the purchase of a good or service product (Hawkins, Neal & Quester, 1994). A comparison between the adoption process and the decision making model is shown in figure 2.

FIGURE 2 : Comparison of adoption process model and decision making model



Source: Hawkins, Neal & Quester, 1994:413

The awareness stage of the adoption process can be likened to the problem recognition stage in the decision making model. The interest component of the adoption model is similar to the information search normally undertaken in the decision making model. The evaluation stage is similar to the evaluation of alternatives undertaken for any

product or service. In the adoption process, consumers will trial a new product. However, in the decision making model this trial stage becomes the purchase stage. The final stage in the adoption process is the adoption component which in the decision making model would be the postpurchase evaluation (Hawkins, Neal & Quester, 1994). This adoption process model, then, appears to have been modified from the decision making model, rather than being specifically developed for the adoption of a new product.

The Hierarchy of Effects Model

This model contains six stages. Lavidge and Steiner (1961), the original proposers of the model, divided the process into three psychological states: cognitive; affective; and conative. The cognitive state relates to the thought process, the affective state relates to the emotional response, and the conative state relates to the motivation of the consumer. This model relies on the information-attitude-behaviour approach of: based on information; a consumer form attitudes; which then affects behaviour. The first stage of the hierarchy of effects model is awareness, and relates to when the consumer becomes aware that the product exists. Knowledge occurs when the consumer comprehends what the product offers. Liking happens when the consumer has developed a favourable attitude towards the product. Preference arises when the favourable attitude has developed to the point where the product is preferred over other products. Then conviction would occur, and the desire to buy is coupled with the belief that the decision to purchase is correct. Consequently, the adoption stage will occur. Lavidge and Steiner suggested that the time involved at each stage would vary according to the product, but each stage will be completed in some form (Robertson, 1974).

Rogers/Shoemaker Model

The most widely accepted model of the consumer adoption decision process has been Rogers and Shoemaker model (Black, 1983). This model developed from research on the diffusion of innovations and was also referred to as the innovation-decision process. Five main steps are identified in this process: knowledge; persuasion; decision; implementation; and confirmation. Knowledge happens when the consumer is exposed to the innovation and gains some understanding of it. Persuasion relates to

the point where either a favourable or unfavourable attitude is formed towards the innovation. Decision relates to the time when the consumer actually engages in behaviour that leads to the purchase of the product. Implementation refers to the actual use of the innovation. Confirmation is a form of dissonance whereby the consumer seeks reinforcement of the decision after adopting the innovation. If the reinforcement is not obtained, the decision to adopt may be reversed (Rogers, 1983).

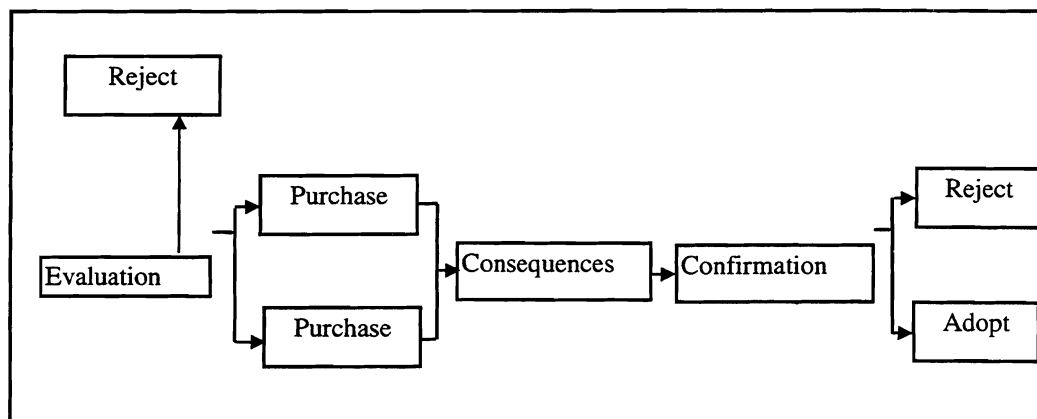
Adoption Decision Process Model

This adoption decision process model proposed by Robertson (1974) contains eight stages. This model retains the information-attitude-behaviour concept. Added to this, feedback loops were introduced to take into account both rational decision making and non-rational decision making. This takes into account the consumer who purchases on impulse and who may move from the awareness stage straight to the trial stage. The first stage of this model is the problem recognition stage, which is where the consumer perceives a problem to exist. Accordingly, some form of information search will take place. This leads to the second stage of awareness of the product. Comprehension follows, which is when the consumer begins to understand what the product actually does. At this stage the product may be grouped with other similar products or be perceived as a new type of product by the consumer. The next stage is the development of an attitude towards the product. In general, a favourable attitude towards the product is required for the adoption process to continue. Once a favourable attitude has been developed, the consumer will then be likely to purchase the product on a trial basis. However, this trial will only occur if the consumer believes that trialing is the correct course of action. At this stage the consumer may refer to reference groups for validation of the decision, and this step is known as legitimisation. The next step will be the actual trialing of the product. If the trial process is successful, then adoption of the product will take place. That is, the consumer will become a repeat user of the product. The final stage in this model is the dissonance stage, which is where the consumer will question the decision to adopt and may return to a type of legitimisation stage again (Robertson, 1974).

Additional models

In addition to the models referred to above, there are other proposed models which, in many cases, are refinements of the models described above. Antil (1988) proposed that any of the adoption process models require two additional steps between the trial and the adoption stages. These two steps are related to direct product experience and product evaluation and are termed consequences and confirmation. The proposed modification to the adoption process is detailed in figure 3.

FIGURE 3 : Proposed Modification to Trail-Adoption Process



Source: Antil 1988:9

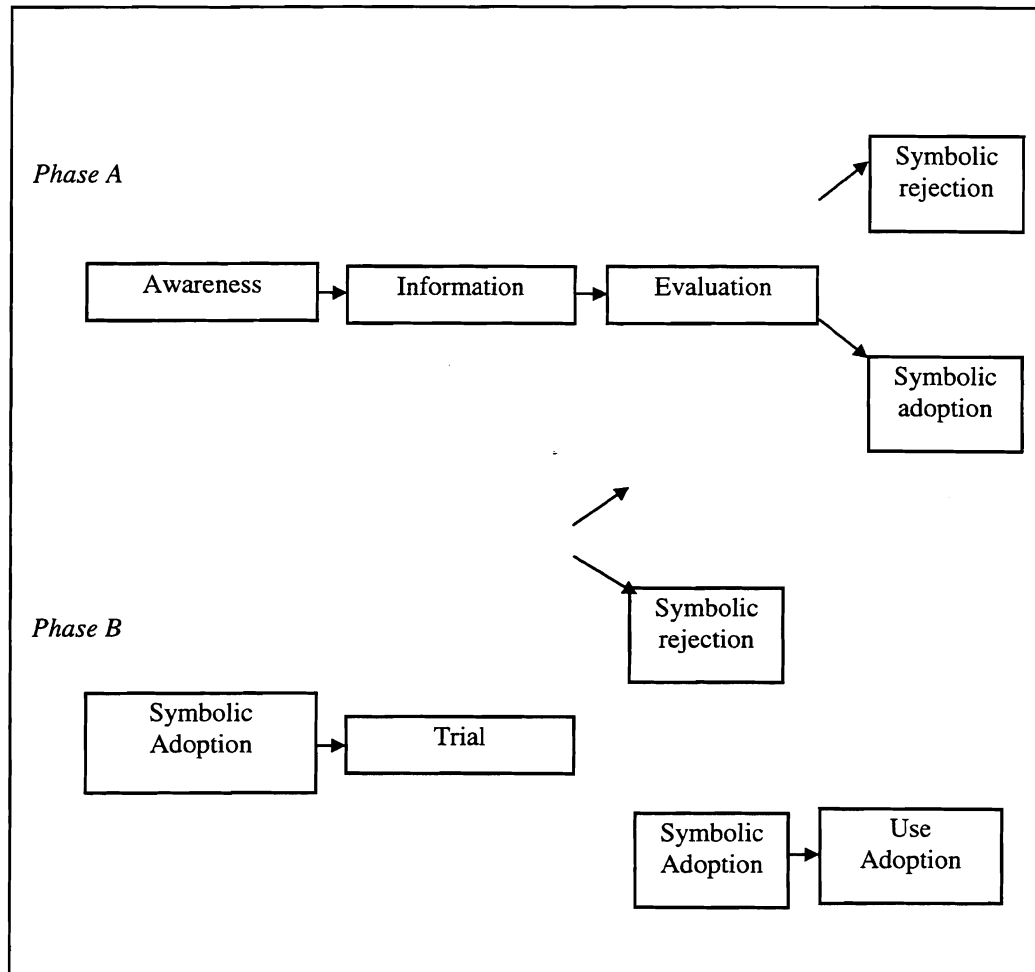
The consequences stage relates to the way in which the new product is used and the impact that it has on the consumer. In particular, a product that has unique characteristics may require in its use important behavioural changes. In addition, consumers may utilise the new product in different ways, which may lead to differing consequences (Antil, 1988).

After this direct product experience or consequences stage the consumer will evaluate the product. This stage is termed confirmation, and it relates to whether the consumers prior expectations of the product have been met and, thus, confirmed. Conversely, if prior expectations have not been met, then dissatisfaction will occur, and it will affect the future adoption of the product (Antil, 1988).

Other proposed refinements to the adoption process model included those of Klongan and Coward (1970), who specifically refined the hierarchy of effects model. Klongan and Coward's model is known as the symbolic adoption process model, and it suggests that a product needs to be symbolically adopted (or mentally accepted) before actual

adoption will occur. Accordingly, the symbolic adoption process model includes the additional stages of symbolic adoption/rejection both after the evaluation stage and after the trial stage (Parthasarathy, Rittenburg & Ball, 1994). The symbolic adoption process model is detailed in figure 4.

FIGURE 4 : Symbolic Adoption Process Model



Source: Klongan & Coward, 1970:60

Klonglan & Coward (1970) appear to have interpreted the adoption stage of the hierarchy of effects model, as being more a trial stage, rather than the final adoption stage. In phase A of the model, the consumer evaluates the product and then either symbolically adopts or rejects the product. If symbolic adoption takes place, then the consumer will trial the product, and this will lead to symbolic adoption or symbolic rejection. Symbolic adoption at this point will lead to actual adoption and use of the product (Klongan & Coward, 1970).

As the number of adoption process models has increased, and the components within the models become ever more refined, it appears the delineation between the diffusion

of innovations concept and the adoption process has become more pronounced. In particular, the post adoption or dissonance component is closer related to the adoption process than the diffusion of innovations.

In short, there does not appear to be a generally accepted model of the adoption process. There are a number of the proposed models, yet discussion still continues on how these existing models require further refinement.

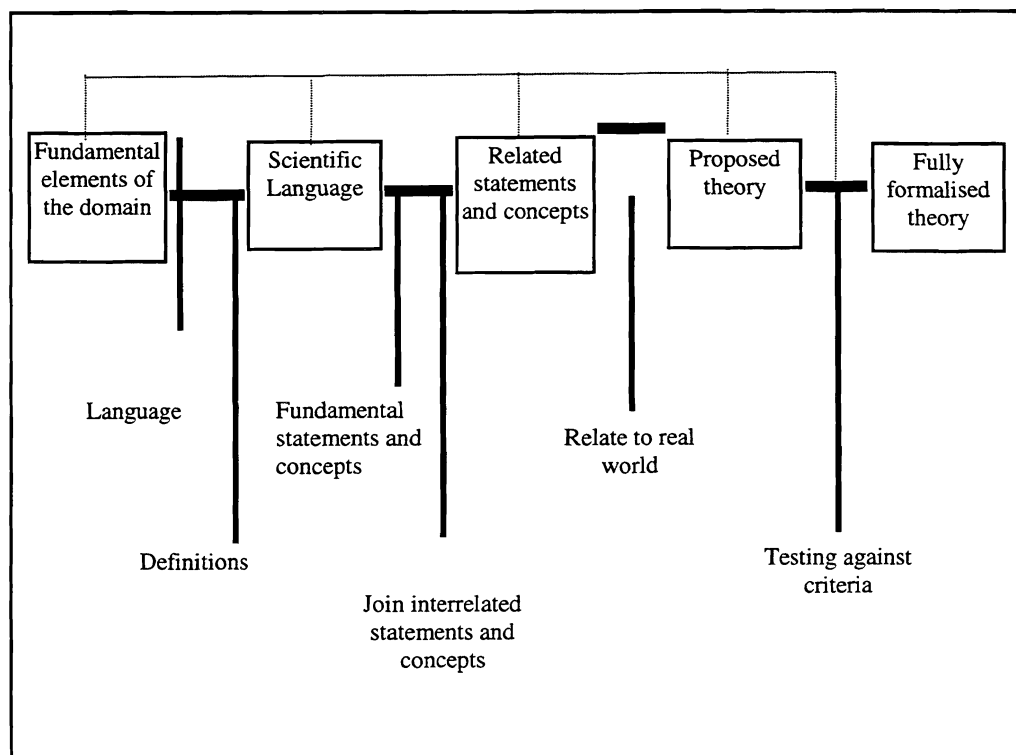
Summary

The adoption process is the stages which an individual will theoretically go through in adopting a new product. A number of varying models have been proposed, and they share a number of similar stages. In general, all models follow a process of knowledge-attitude-behaviour.

Evaluation of current theory

This section will outline the processes of theory development, and evaluate where the adoption process falls in this continuum. The framework for this approach will be the use of a theory building model against which these concepts will be applied. The framework is detailed in figure 5.

FIGURE 5 : Theory formalisation framework



Source: Ward, 1996

This framework outlines the steps a concept must follow to reach the point where a full formalisation of the theory can take place. The feedback loop has been added to facilitate refinements to theories, or possible reconsideration of the fundamental elements of the domain. It should be noted that the necessity for an alteration may not be recognised until a full formalisation process is attempted.

In order to determine where on this continuum the concepts of the adoption process fit, it is necessary to assess the adherence to each step in the process.

Fundamental Elements of the Domain

The first step identified in the theory formalisation process is the identification of the fundamental elements of the domain.

The adoption process has identified the fundamental elements of the domain by determining that antecedents that will be required before the behavioural action of adoption (Robertson, 1974). Despite the argument which ensues over the terms applicable, and the exact number and order of the steps in the process, the adoption process retains the fundamental ideas that: consumers acquire knowledge about an innovation which then leads to a formation of an attitude towards that innovation, regardless of whether this attitude occurs prior to or after the purchase has taken place. Thus, it might be argued that the adoption process has satisfactorily completed this step in the development towards proposed theory.

Scientific Language

The next step on the continuum is the development of a scientific language. This requires that a theory has a language synonymous with it, yet simultaneously, that language system should be understandable while providing clear definitions of the elements within the theory.

A formal language system exists which is specific to the adoption process. However, due to the differing number of proposed models of the process, it is difficult to argue that this language is universally accepted.

Related Statements and Concepts

This component of the theory formalisation process requires that the fundamental statements and concepts exhibit an interrelated relationship.

The adoption process exhibits interrelated statements and concepts. This is a progressive theory approach whereby each step is linear. There is an interrelatedness that requires a relationship to exist before the processes will have any efficacy.

Proposed Theory

In order for these concepts to move along the continuum to the point of a proposed theory, they must exhibit a relationship to the real world.

The adoption process exhibits a relationship to the real world. At some point the consumer will become aware of the new product and form an attitude towards that product. This will impact on the use of the product. The adoption process exhibit strong relationships with the real world because it is pragmatic in nature. Marketing practitioners would find this concept both understandable and applicable.

Conclusion

Based on this assessment, the adoption process has some weaknesses in theory development particularly in the area of the development of a scientific language. However, an attempt to formalise this proposed theory might also prove useful and assist in better identifying those areas where weakness lies. Therefore, this proposed theory can now be evaluated against some metatheoretical criteria.

Theory Evaluation

As it can be seen that the adoption process have moved some way along this continuum to a proposed theory position, it is now applicable to assess how they stand up against the criteria of a theory. In order to assess this, the concepts will be tested using an amalgam of Hunt (1991) and Sheth, Gardener and Garret's (1988) metatheory criteria.

Evaluation Criteria

Hunt's (1991) criteria for assessing theory revolves around the definition used by Rudner (1966). Hunt evaluates a theory via three categories: on systematic relatedness of statements; evidence of lawlike generalisations; and empirical testability. Sheth, Gardner and Garret's (1988) criteria involves looking at theory in respect of six categories: structure; testability; richness; empirical support; specification; and simplicity (STRESS). Both sets of criteria proposed by these authors overlap and, as such, will be dealt with simultaneously in order to provide a concise assessment of the validity of calling the adoption process a theory. The purpose of this analysis is not a subjective rating of the theory but to attempt some form of evaluation which may identify areas of concern should they exist.

Structure

The first evaluation criteria pertains to a systematic and logically related structure. The structure criterion refers to the organisational pattern of the theory, in particular whether the concepts are well defined and form a nomological network (Sheth, Gardner & Garrett, 1988). A theory should be systematically related because it increases the scientific understanding of the phenomenon the theory is designed to explain (Hunt, 1991). Systematically related refers to the way in which a theory should be organised, and the manner in which it fits together so as to connect the statements of the theory (Rudner, 1966).

The structure of the adoption process appears to be linear in approach. However, there are difficulties with this approach. There is continued disagreement on whether the information-attitude-behaviour continuum is valid (Palda, 1966). On one hand, there are those who argue that a behavioural response may occur prior to attitude change. Research in this area has led to suggestions that low involvement conditions in product purchase will follow a cognition-behaviour-attitude sequence (Brisoux & Cheron, 1990). However, on the other hand, there are those who argue that the attitude change must precede behaviour change. It has also been suggested that there is a distinction between attitudes towards products and attitudes towards situations. This proposition asserts that if a consumer does decide to purchase prior to attitude change, this is because of a situation change. The purchase of a product due to a perceived bargain

price does not necessarily indicate an attitude change towards that specific product (Rokeach, 1966). In summary, the adoption process appears to lack completeness in structure.

Testability

The testability criterion refers to the suitability of the theory to be applied and tested by other practitioners (Sheth, Gardner & Garrett, 1988). The adherence to this criterion can be assessed by whether propositions can be generated from the theory, and whether they can then be tested (Ward, 1996).

The adoption process provides a limited structure from which propositions can be generated. This is primarily because no one model of the adoption process can be regarded as dominant and as having generalisable components. Attempts at generating propositions from these models would be successful; however, the validity of these propositions would always be questionable as a subjective decision would be required when deciding which of the various models was to be the basis of the propositions. In summary, the adoption process, while appearing to meet the criterion, does not allow for any valid propositions to be generated.

Richness

The richness criterion relates to the generalisability of the theory (Sheth, Gardner & Garrett, 1988).

The adoption process exhibits problems in this area. While the adoption process must go through stages, and this is generalisable across each proposed model, there is concern that the theory is too hierarchal in nature, and that in many cases the stages will not occur progressively. Moreover, it has been argued that the number of stages which consumers may go through will vary. This has led to suggestions that the various models be reassessed and, as such, the components of the theory be reconsidered (Robertson, 1974). Accordingly, there is some degree of uncertainty about the components of the models, which limits the overall generalisable nature of the theory. In summary, the adoption process does not fully conform to this criterion.

Empirical Support

The empirical support criterion relates to the degree of confirming evidence that the theory in question is able to provide.

In the marketing discipline there has been numerous studies into this theory. However, this has resulted in the development of various models and a continued dispute as to exactly which model is most valid (Antil, 1988). Therefore, it seems appropriate to suggest that no one particular model has been empirically verified with sufficient certainty to suggest that the theory of the adoption process has empirical support. In summary, the adoption process lacks empirical support as a theory in general. It has numerous models that continue to be further refined.

Specification

Another criterion is internal consistency, or specification. This deals with definitions, and whether they are concise and contain unambiguous relationships (Sheth, Gardner & Garrett, 1988).

In the case of the adoption process, there is a lack of concise definitions. There are inconsistencies in defining what exactly is a new product. This is because there are a number of possible ways to do this. A firm orientated definition suggests a product is new when the company producing or marketing the product considers it new. A consumer orientated approach suggests that a new product is established by what consumers perceive to be a new product. A market orientated definition suggests that newness is based on the exposure that consumers have had to the product. This exposure may take two forms, either based on time in the marketplace or on the number of sales made (Schiffman & Kanuk, 1991).

An alternative approach to defining new is to use a product orientated definition. This relates to the impact of the product on the consumption behaviour patterns of the consumer. Using this approach there are three types of product innovation: continuous innovation; dynamically continuous innovation; and discontinuous innovation. Continuous innovation relates to the introduction of a modified product, and this will have the least impact on the consumer because it does not involve a change in

consumption patterns. Dynamically continuous innovation may either be the introduction of a new product or a substantially modified product. However, because it does not generally require any change to the consumers established consumption patterns, its impact will be lessened. Discontinuous innovation involves the introduction of a new product which requires the development of new behaviour patterns and, therefore, has the most noticeable impact (Louden & Della Bitta, 1993).

In addition, there are obvious discrepancies between the differing models of the adoption process, particularly in relation to the number of stages consumers go through. Indeed, it has been suggested that the stages may not always occur in chronological order and that the consumers may skip stages. Furthermore, there are questions relating to the relationship between information, attitude and behaviour, and the assumptions that have been made that an attitude change will result in a behavioural response (Robertson, 1974). In summary, the adoption process does not appear to meet this criterion, because it appears to lack concise definitions of the concepts.

Simplicity

Another criterion to assess theory on is simplicity. Simplicity refers to the pragmatic potential of the theory. In particular, can a theory be communicated to and implemented by other practitioners?

The adoption process rates highly on the simplicity criterion. The categories identified are clearly delineated and easy to decipher. In addition, practitioners could, if required, identify consumers at each stage of the process. The identified stages also allow practitioners to evaluate useful strategies to deal with consumers at each stage. The framework this theory provides assists marketers in identifying the most influential information sources upon consumers at the varying stages. For example, in the earlier stages, mass media is generally the most effective way to increase awareness; conversely, during the latter stages interpersonal information sources gain greater importance in increasing awareness (Schiffman & Kanuk, 1991). In summary, the adoption process exhibits adherence to this criterion.

Lawlike Generalisations

This criterion relates to the predicative and explanatory capabilities of the theory. In particular, lawlike generalisations allow theories to explain phenomena. Lawlike generalisations will have generalised conditionals. These will take three interrelated forms: some type of 'if then' relationship will be indicated; empirical content or indication of a relationship with the real world will be demonstrated; and nomic necessity or evidence that the generalisations are not accidental will be shown (Hunt, 1991).

The adoption process also states that consumers go through stages from an awareness or knowledge of a product, through to attitude formation, and then to decide on whether to adopt or not. However, the validity that an 'if then' relationship exists is questionable. This question will remain while there is disagreement on the number and order of the stages. While the process is pragmatic and does not appear to be purely accidental, the adoption process does have constructional uncertainty which prevents it from meeting this criterion at present. In summary, the adoption process fails to meet the criterion of lawlike generalisations due to the lack of certainty in the concepts of the theory.

Summary

The results of this analysis would seem to indicate that the adoption process is far from meeting the criteria of a theory. There are still unresolved issues pertaining to the fundamental elements of the domain, and which steps should be included in the adoption process model. The adoption process requires changes in structure in order to move closer to adhering to the metatheory criteria applied above.

Implications and Conclusion

Implications for Theory

It has been shown that the proposed theory of the adoption process is not at the stage where full formalisation is possible. It is important to note that few theories in any of the sciences, natural or social, have ever been fully formalised. However, at the same time, the attempt to formalise is a useful safeguard against inadequate theories and it

assists in the development of robust theories by opening them to critical discussion (Hunt, 1991).

There is a definite need to return to the fundamental elements of the process and reach agreement on the stages in the adoption process. Obviously this will, in part, take place through continued empirical testing of the proposed models until a model is identified as dominant. In addition, definitions of concepts, like what a new product is, must be universally defined in order to bring consistency into the research. In the strictest sense, the only uniformity between these models is the identification of stages. Further research is also required into whether the adoption process is sequential in nature, and whether consumers will follow such a rational decision process. It may also be useful to modify any proposed model according to product class.

Implications for Practice

The lack of robustness of the adoption process should increase awareness among marketers of the difficulties in predicting an individual's pattern of adoption behaviour. It should be acknowledged that there will always be some uncertainty in predicting human behaviour, and that the current adoption process models do little to alleviate this uncertainty. Applied market research should take on increased importance in this area as the adoption process concept is neither well defined nor has any predictive or explanatory power.

Conclusion

The application of metatheory criteria to the generally accepted theory of the adoption process has revealed fundamental flaws in the manner in which the term theory is being used in marketing. The adoption process is nothing more than a collection of differing models as to how consumers *might* adopt new products. Moreover, these models differ considerably and a consistent definitional schemata is absent. Marketers must recognise the danger in not exposing proposed theories to any form of testing. Marketing will only move forward through developing a more rigorous approach to theory building, and by rejecting conjectures and judging on substance rather than form.

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