ABSTRACT

PRODUCT WARRANTIES, MANUFACTURERS' RESPONSIBILITIES, AND DISTRIBUTION CHANNELS: INTERACTIVE EFFECTS

By

John Sewell Kakalik

There are two overall purposes of this dissertation. First, the study is designed to assess the nature and extent of automobile manufacturers' responsibilities under present warranty law. Second, it suggests ways of improving both the legal statement and performance of these responsibilities from a public policy viewpoint. The sources of material are public reports, hearings, expert testimony, and the marketing literature.

The dissertation is organized in six major areas:

1. A treatment of various definitions of product defects and the implications and difficulties of incorporating such definitions into law.
2. The general approach of warranty law in defining defective products and specific theoretical and practical problems of legal enforcement under warranty law.
3. A review of marketing theory and literature as applied to the problem of defects.
4. A description of marketing practice and warranties; specifically, managerial considerations in generating warranty policies, and the design and control of warranty systems.

5. An analysis of warranty system operations, their competitive behavior, and consumer response characteristics.

6. Specific suggestions in defining and improving statements and implementation of manufacturers' legal responsibilities for defects. These suggestions are stated as propositions capable of being empirically tested.

Research conclusions are drawn in each of the above areas.

The basic warranty purpose identified in this dissertation is that of distributing the risks of product defects. Warranties must therefore identify both risks and product defects. The risks treated in this study are those potential consumer losses measurable by product repair and associated inconvenience. Warranty law, in addition, treats many other types of risks. Conceptually, the best means of identifying product defects is based on violations of consumers' expectations rather than on physical product properties. Warranty law has adopted this approach.

The present thrust of warranty law, however, leaves the scope and nature of firms' responsibilities relatively undefined. Conceptually "correct" defect definitions for consumer protection raise serious public policy issues both theoretically and practically.

While marketing theory and literature should supply guidelines in this matter of legal responsibilities, a gap currently exists. Companies, as a result, have faced the problem of designing, administering, and controlling warranty systems with few guidelines from the marketing

discipline or the law. Practical marketing approaches to firms' warranty policies and risk distribution procedures operate in the context of a confusing set of public policies, criticisms, and legal developments.

The analysis of the practical operation of warranty systems suggests the following. Consumers have no objective criteria for evaluating any warranty. Dealers may view a warranty to their advantage at different points in time, or within different strategies or product line adjustments. And, while manufacturers' may have substantial control over product distribution, prices, and warranty policies; manufacturers' power to control warranty system performance may be severely limited. The analysis also suggests that particular uses of warranties can have anti-competitive effects favorable to manufacturers with declining market positions.

Improvement of the risk distribution process requires an abandonment of present attempts to implement warranty law on a general basis. Warranty law has been written and interpreted to apply to all products, all distribution structures, all types of losses, and many different individuals. Improvement requires specific consideration of each of the above. Improvement of automobile warranties also requires that all firms adopt a specific set of warranty provisions either by consensus or governmental regulation.

This dissertation formulates a set of provisions designed to improve both the statement and performance of automobile manufacturers' legal responsibilities for defects.

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TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER I

WARRANTY PROBLEMS

Introduction

Automobiles, airplanes, heavy industrial equipment, clothes washers, televisions and similar products have major effects on the life style, physical safety, and financial assets of an economy's members, both individually and collectively. The widespread use and availability of these products is a definite characteristic of an affluent society.

Conflict, enormous in complexity and magnitude, arises between the mass production and distribution of these products on the one hand, and societal goals and objectives on the other. Public and philosophical inquiry in this conflict ranges over such diverse areas as air pollution and emission control, public safety, governmental regulation regarding franchise agreements, anti-trust actions, licensing, repairs, and contract law. The resolution of this conflict is in no sense near an end, but it is becoming increasingly apparent that major parties to solutions are the manufacturers, and government and consumer agencies as society's representatives.

Mass manufacturers of "highly technical" products and the laws which govern their actions in product sales have been a source of increased conflict in recent years. One particular area of the conflict has involved warranties.

This dissertation seeks a fuller understanding of the warranty and its relation to business decisions, public policy, and consumer welfare. Warranty law and firms' responsibilities present some of the most challenging problems to the field of marketing and the law itself. The solution to these problems will directly affect market processes and indeed the total society.

The purpose of this chapter is to describe the general nature of the conflict over warranties and to form the background of the present research. The chapter first presents a brief statement of the present confusion over warranties. Second, warranties are classified in order to treat the particular research problems. Third, typical warranty problems are discussed from the viewpoints of manufacturers, consumers, and public policy. With the preceding background, the nature of the research, its purpose, and the general approach are discussed.

The Confusion Over Warranties

Warranties today are characterized by a great amount of confusion and uncertainty. The confusion over warranties is related to three major factors: first, the basic legal nature of the warranty itself; second, a

progression of changes in warranty applications and interpretations; and third, the sheer number of parties involved in and affected by a given warranty. A brief discussion of these factors follows.

Because of their broad and uncertain legal nature, warranties are difficult to define and analyze in any straightforward manner. Present warranty law applies to every channel member, and potentially to any kind of loss that a buyer may suffer. In the final analysis, the existence of any given warranty is determined in court. In some instances, courts may ignore the written terms of a warranty agreement. Moreover, courts may actually "create" certain other warranties. As a completely legal matter, present written warranty agreements rarely define the full nature of a firm's warranty liabilities.

But as a more practical matter, changes in warranty applications along with judicial interpretations have broadened both the extent and duration of firms' liabilities. Courts, seeking to aid injured consumers, have extended warranty liability "backward" through distribution channels; often abandoning more "traditional" rules of privity and notions of fault. Manufacturers, for example, have become directly responsible to consumers who were previously separated from them by one or several intermediaries. But more significantly, past decisions have left the limits of the increased responsibility and its duration relatively undefined.

Adding to the overall warranty confusion has been the number of people who are directly or indirectly involved. For example, an appliance manufacturer's warranty affects his own dealers, competitors at all levels of distribution for both sales and service, legal agencies, courts, consumers agencies, legislators, successive owners of the product, other persons who may come in contact with the product, and most obviously the manufacturer himself. In the broadest sense; because the warranty represents a potentially significant cost element of marketing a product, the total allocation process is affected.

Warranty Classification

Over the whole range of warranties, this dissertation focuses on one specific area. To identify the area of interest, it is useful to classify warranties.

Warranties can be classified by four characteristics.[1]

1. The product or product class to which the warranty applies.
2. The two major parties to the agreement.
3. The types of loss covered.
4. The present marketing channel for the product.

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[1]Warranties are also classified as express, implied, merchantability, fitness, etc. However, these legal classifications are not particularly useful for analyzing marketing problems. The above classification stresses the application of warranty law to responsibilities.

Each of the above serve to identify the scope and substance of any treatment of warranties.

As noted earlier, warranties apply in the sale of any product. Thus, it is possible to speak of a warranty for a television set, a wristwatch, a drug product, a component part, or even a canned vegetable. It is obvious, therefore, that the nature and importance of a warranty varies with product characteristics. The focus of this dissertation is on automobile warranties;[2] more specifically, warranties for new automobiles.

The notion of an automobile warranty, however, does not in itself refer to any two parties. There are, for example, auto warranties that exist between the manufacturer and dealers, dealers and consumers, and manufacturers and consumers. In fact, the sale of the product at any level in distribution has an associated warranty. Thus, other warranties may potentially be created between a manufacturer's parts suppliers and successive buyers of the product. Successive buyers may then include dealers, dealer's customers, or even other buyers after the product reaches the "ultimate consumer." It is, therefore, theoretically possible to speak of a warranty between a parts supplier and the fourth owner of the automobile after

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[2]Automobiles can also be considered part of a larger class of products such as televisions, durable appliances, machinery and the like. Much of the thesis material therefore has relevance to other products; but, the discussion will be limited to automobiles for the most part.

it leaves the dealership. For reasons to be discussed later, this dissertation is primarily interested in the warranty between the automobile manufacturer and the first retail buyer.

The types of losses covered are perhaps the most significant characteristic of a given warranty. Losses associated with a product or its use may be divided into four categories.

1. Physical injury to the buyer or other persons.
2. Property damage.
3. Commercial, economic, psychological or other loss due to the absence of the use of the product.
4. The repair or replacement loss of an unsatisfactory product itself or some part of the product.

Warranties potentially cover all of the above categories.

The primary concern of this dissertation is the fourth category of loss. That is, the loss which is measurable by the direct costs of repairing or replacing the physical product itself. For convenience, this type of loss will be identified as product loss.

The final means of classifying a warranty rests with the present marketing channel. It should be noted that selecting a product, two parties, and the types of loss for a warranty does not automatically identify a distribution structure. For example, washing machines are distributed through both franchised dealers and national chains. Other products are distributed directly

from manufacturers. However, the nature of the warranty varies with channel arrangements. Manufacturers' warranties direct to consumers, through chains, or through dealers, have far different properties.

As will be shown later, the existence of intermediaries bears an important relationship to manufacturers' warranty terms, costs, and performance of warranty obligations. A major part of this thesis is devoted to studying these channel relationships. For the automobile, however, the dominant form of distribution is through franchised dealers. The focus of this dissertation is therefore on channels which have been identified as "manufacturer-dealer systems."[3]

To review, the focus of this dissertation is on the new automobile warranty, between manufacturers and the first retail buyer, covering product loss, for automobiles distributed through manufacturer-dealer systems.

For identification, the above four part classification will be called simply, an automobile warranty. However, the reader is cautioned that the general terms "automobile warranty" may easily have reference to different losses, different parties, and different forms of distribution.

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[3]Valentine F. Ridgeway, "Administration of Manufacturer-Dealer Systems," Distribution Channels: Behavioral Dimensions, edited by Louis B. Stern (Houghton, Miflin, 1969), pp. 125-6.

Warranty Problems

While many problems are associated with warranties, a great amount of recent attention has been directed toward the warranty policies[4] of automobile manufacturers. This section briefly identifies the major problems and criticisms of these warranty policies from the viewpoints of manufacturers, consumers, and public policy.

Manufacturer's Warranty Policies

A definition of warranty policy has presented a major problem to manufacturers. The problem can be divided into two areas. First, the manufacturer must specify a set of provisions to consumers. Second, a means of assuring performance relative to the provisions must be devised. Although decisions of warranty policy must be made simultaneously in both areas, the following discussion treats them in order.

Provisions

Warranty provisions fall into five major categories.

1. Defects covered.
2. Time/use provisions.
3. Compensation.
4. Location.
5. Conditions.

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[4]The term policy as here applied to warranties is used to draw a distinction between manufacturers' intended liability as distinct from what it may actually be under warranty law.

The specification of each of the above forms the substance of a manufacturer's warranty policy to consumers.

While decisions over provisions will be treated in greater detail later, it should be noted here that many options are available. Defects included can range from certain parts, to the total vehicle. The time/use specification can provide for varying measurements and amounts of months, miles, or even hours in use. Compensation can be for a percentage of repairs, no charge, or additional payments for inconvenience. Depending on the form of the previous provisions, locations specified may have a significant impact on the cost of a defect to consumers. And, because all defects cannot reasonably be covered independently of their cause, conditions form an important part of the agreement. As an example, a statement of the above terms might be:

The manufacturer will replace or repair, at no charge to the owner, all defects in materials and workmanship occurring under normal use and care within 12 months or 12,000 miles (whichever comes first). All such repairs are to be completed at any authorized dealership of (vehicle make).

Performance

In conjunction with warranty terms, the manufacturer must also make a set of decisions which create a system for assuring performance. These decisions comprise two areas; authorization of persons or institutions to

perform repairs, and a means of payment, if any, to the institutions for services rendered.

Authorization to perform warranty repairs is a critical element of a warranty system. With some notable attempts to do otherwise, automobile manufacturers have typically designated dealerships as the primary authorized institutions. It is, therefore, at the dealership level that many critical interpretations of warranty policy are made. As authorized agents, dealers make many decisions as to whether or not a defect falls under the warranty terms.

Payment for repairs represents the second major decision area. Manufacturers' compensation to dealers involves decisions over parts, labor, facilities, inventory, and other record keeping procedures. Past warranty policies of manufacturers have attempted to treat each of the above in a payment formula reflecting the dealers' costs.

Thus, manufacturers' decisions of warranty policy range over a diverse number of areas. But these policies have raised a number of problems and criticisms from both consumers and government.

Consumer Criticisms

Warranty policies have typically been examined in the context of government hearings with a view toward consumer protection. Many Congressmen have voiced

objections to policies on behalf of their constituents. Because of the above, it is often difficult to separate consumer complaints from those of government. The following discussion treats specific consumer criticisms of the provisions and performance of manufacturers' warranty policies. Broader issues or consumer complaints of warranties will be treated later under public policy problems.

Provisions

Virtually every provision of manufacturers' warranty policies has been criticized. Presented below are some typical complaints about specific provisions regarding defects, time/use, location, condition, and compensation.

Defects.--Much of consumers' dissatisfaction centers around the complaint that the warranty does not cover the entire product or at least is not as complete as consumers would like. The Federal Trade Commission Staff Report on Automobile Warranties points out some of the common exclusions:

> Excluded from all the warranties are the parts and labor considered to be part of normal maintenance or which need replacing only because of wear: to wit, engine tune-up, adjustment of wheels, brakes or clutch, lubrication and oil change, and replacement of such items as brake and clutch linings, spark plugs, ignition points, filters, clutch plates, light bulbs, and the like. Similarly excluded are

> deterioration due to normal wear or exposure of soft trim, decorative bright metal trim, painted parts, rubber parts and the like.[5]

An additional item sometimes excluded is tires.

Some consumers feel that whatever goes wrong with the product should be the responsibility of the manufacturer. For example:

> Despite efforts by manufacturers to clarify the terms of warranties, many car owners are still inclined to believe that the warranty covers everything that goes wrong with the car within the time-distance period.[6]

Time/Use.--Time/use provisions are themselves another source of dissatisfaction. This dissatisfaction was particularly apparent with the recent cut-back in the warranty time and mileage limits of the major automobile companies. Chairman Paul Rand Dixon in a letter to the chairman of the Senate Commerce Commission wrote:

> For the second consecutive year the major automobile manufacturers have announced significant cutbacks in their automobile warranty programs. Last year their cutbacks involved primarily limitation upon the right of transferability to second and subsequent owners. Chrysler eliminated all transfer rights for its extended 5-year 50,000 power train warranty. General Motors and Ford introduced a fee system for this aspect of their warranties.
>
> . . . The cost to the manufacturer for warranty service work is considerably less than dealers would charge the public for non-warranty work.

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[5]Federal Trade Commission Staff Report on Automobile Warranties, Washington, D. C. (November 18, 1968), p. 28. (Mimeographed.)

[6]Ibid., p. 27.

> All dealers charge a higher markup on parts and most make higher labor charges on non-warranty work. Although the difference between cost to manufacturer and cost to retail customer is very difficult to estimate, it is likely to be substantial.[7]

In addition, consumers have argued for extensions of the warranty to cover the "life" of the product. The Task Force on Appliance Warranties noted:

> Another complaint is that the duration of a warranty is unduly limited. Numerous expensive television sets carry warranties of only 90 days--this despite the manufacturer's claims that use of solid state circuitry has eliminated the factor (heat) which is responsible for the most trouble in television sets. The length of other warranties seem to have been carefully determined so that they lapse just before malfunctions may be expected to appear.[8]

Location.--Location provisions for service are also another source of complaints. Because the warranty requires service at the dealership, some people feel that the warranty should cover towing where necessary.

Increased consumer mobility has created additional complaints. Where the consumer has moved to another locality, provisions limiting service to the original dealer have caused problems. Moreover, in some cases the local dealer may have gone out of business or moved.

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[7] Ibid., pp. D-1, D-2.

[8] "Report of the Task Force on Appliance Warranties and Service," prepared by Federal Trade Commission, Department of Commerce, Department of Labor, Special Assistant to the President for Consumer Affairs, January 8, 1969.

Conditions.--Those provisions dealing with conditions often generate dissatisfaction. Provisions limiting warranty coverage to only the first owner have caused resentment. Consumers reason that the warranty was granted and paid for by the first owner. Therefore, the next buyer is being "short-changed" if the warranty does not apply to him. Also, consumers reason if the warranty is granted for a particular time period, it should not matter to whom the warranty applies.

Other conditions have been assailed as being troublesome and unfair. Certain requirements that the dealer be notified of periodic maintenance and such maintenance be certified at the appropriate dealership has led to dissatisfaction. For example, one auto warranty stipulated:

> As a condition to this warranty, the following Required Maintenance Services must be performed:
>
> 1. Change engine oil every three months or 4,000 miles, whichever comes first.
> 2. Replace the engine oil filter every second oil change.
> 3. Clean the carburetor air filter every six months and replace every two years.
> 4. Check the operation of the crankcase ventilator valve and clean the oil filter cap every six months and replace the ventilator valve every year.
> 5. Lubricate from suspension ball joints and tie rod ends at 36,000 miles or 3 years of operation, whichever occurs first.[9]

In addition:

> As an express condition of both the 24/Month/ 25,000 Mile Warranty Coverage and 5 Year/50,000

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[9]Chrysler Warranty, Model year 1968.

> Mile Warranty Coverage under this warranty, the owner must submit a validation form to Chrysler Motors Corporation annually. Each year, on the anniversary date of delivery of the vehicle to the First Registered Owner (or the date the vehicle was originally placed in service, whichever occurs first), the owner of the vehicle must: 1. furnish an authorized Chrysler, Plymouth, Imperial or Dodge dealer evidence that all Required Maintenance Services were performed at the proper intervals; 2. have the dealer certify on the validation form supplied by Chrysler Motors Corporation (a) the dealer's receipt of evidence of such maintenance and (b) the vehicle's then current mileage; and 3. mail such completed validation form to Chrysler Motors Corporation at the address indicated on the form.[10]

In the case that the consumer has the maintenance performed but cannot furnish sufficient proof, invalidation of the warranty on these grounds seems unduly harsh.

Compensation.--A final criticism of warranty provisions relates to the cost of service. Costs to consumers can be divided into two major segments. First, there are the direct or out-of-pocket costs for correcting a defect. Second, there are additional indirect costs in terms of time lost, trouble, or inconvenience.

While auto manufacturers' warranty policies have not suffered from complaints of direct costs, they have been criticized for the amount of indirect costs. For example, many consumers point to the inconvenience associated with the loss of the product and the time and trouble in getting repairs made. Other factors mentioned are the necessity for automobile transportation for work,

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[10] Ibid.

towing expenses, and the fact that additional transportation must be acquired.

Performance

Beyond the warranty terms, a number of consumers' criticisms relate to performance. Criticisms of performance fall in three major areas: interpretation, poor service, and outright cheating.

Interpretations.--A critical factor in warranty systems is that interpreting the warranty policy and determining whether a defect is covered takes place at the dealership. It therefore follows that interpretations become an area of great importance to consumers and the entire operation of the warranty system.

The most frequently heard complaints are:

1. The language of the manufacturer's express warranty is so vague and legalistic that the consumer has no understanding of what is actually covered by the warranty.
2. The manufacturer issuing the express warranty is also the sole judge of whether or not his warranty should apply. It seems to the average consumer that the manufacturer almost always resolves the matter in his own favor. The manufacturer is, of course, in a greatly superior position to that of the consumer and is more able to deal with such problems than the consumer.
3. The consumer's only recourse when the manufacturer fails to make the needed repairs is to start a long and expensive court battle. Such a court battle not only involves time and expense but places the individual consumer in the position of having to do battle with his greatly more resourceful superior.[11]

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[11]Federal Trade Commission Hearings on Automobile Warranties, State of New Jersey, Testimony of Paul J. Krebs, Executive Director, Office of Consumer Protection (January 9, 1969), pp. 40-41.

The following wording represents several areas in which the dealer must make interpretations:

> This warranty shall not apply to any passenger car that shall have been subject to misuse, negligence or accident, nor to any passenger car that shall have been repaired or altered outside of a Chrysler Motors Corporation Authorized Dealer or Service Center so as to affect adversely its performance and reliability, nor to any repairs or other servicing required as a result of using parts not sold or approved by Chrysler Corporation.[12]

Furthermore, statements that require that the warranty is only valid under "normal use and service" make interpretations necessary. In addition, "open-ended" clauses make it difficult to determine the parts which are under the warranty. The following was taken from a 1968 warranty:

> The warranty shall not apply to tires (which are covered by the tire manufacturer's warranty), nor to normal maintenance services, such as, but not limited to, engine or automatic transmission tune-up, fuel system cleaning, valve carbon removal, brake and clutch adjustments, wheel alignment and balancing and similar mechanical or body adjustments, nor to the replacement of service items, such as, but not limited to, spark plugs, ignition points, condensers, filters, clutch and brake linings, automatic transmission bands and clutch plates, light bulbs, wiper blades, belts and hoses; nor to the deterioration of soft trim, decorative bright metal trim, painted parts, other appearance items and rubber or rubberlike parts, due to wear and exposure.[13]

The wording "such as, but not limited to . . ." and "similar mechanical or body adjustments . . ." and "due to

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[12]Chrysler Warranty, Model year 1967.

[13]American Motors Warranty, Model year 1968.

wear and exposure," allow a degree of latitude in the determination of warranty provisions.

Complaints of interpretations have also been made toward the tire exclusion mentioned earlier. Senator Nelson, before the Federal Trade Commission, testified:

> More often than not, the tire warranty proves to be nothing but a sham. In the first place, it is never absolutely clear whether the auto or tire manufacturer has final responsibility for the original equipment tires--so the consumer is shunted back and forth between the two and often surrenders in frustration. Secondly, the vague language and terms of the warranty leave it open to almost any interpretation. It is almost impossible for the consumer to be certain of his rights under the warranty so he must accept whatever judgment the dealer makes.[14]

Poor Service.--Dissatisfaction with warranty service is another source of criticism. Consumers complain that there are problems of dealer delay and excuses in making repairs.

Consumers have been told by dealers that the problem exists because the dealer lacks parts, is too busy, lacks mechanics, receives inadequate compensation, has too much paperwork, and has had poor experience in reimbursement. In some cases the dealer simply refuses to do the work and tells the consumer to take the car back to the dealer that he bought it from.[15]

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[14]Federal Trade Commission Hearings on Automobile Warranties, Testimony of Senator Gaylord Nelson (January 9, 1969), p. 22.

[15]Federal Trade Commission Hearings on Automobile Warranties, Testimony of Robert Berke, Executive Director of National Fleet Administration (February 10, 1969), p. 805.

Problems of dealer delay were summarized in the following manner by a Congressman testifying before the Federal Trade Commission.

> The warranty contract works only for the persevering car owner and if you get to the dealer before 8:05 in the morning, or stay overnight and sleep in your car, you can get the work done. But if you are there by 8:10 the shop is filled for the day and the warranty is a useless piece of paper which no one respects. I have seen dozens of housewives in the showroom of the service agencies who have completed afghan rugs while waiting for their cars to get fixed.[16]

In addition, consumers complain that there are simply too many defects even if the product is properly repaired, and even if the rest of the service is satisfactory. Others complain that the transfer of warranties is too difficult.

Cheating.--A final source of complaints relates to charges of outright cheating on the part of dealers. This cheating is hypothesized to take many forms but generally falls into two major categories. First is a practice referred to as the "sunshine treatment" or the "wall job."[17] In such circumstances it is said that the dealer merely takes the car for a day or so and parks it in the lot

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[16]Federal Trade Commission Hearings on Automobile Warranties, Testimony of Charles A. Vanik, Congressman from Ohio (January 9, 1969), p. 34.

[17]Federal Trade Commission Hearings on Automobile Warranties, Testimony of Robert J. Klein, Economics Editor, Consumer Reports (February 6, 1969), p. 519.

somewhere and returns it to the consumer. The return is accompanied by statements that the car is fixed or there wasn't anything wrong with it.

The second charge relates to the padding of bills in addition to warranty service performed. Some consumers allege that they have been charged for needless additional repairs when warranty repairs are made.

Public Policy Issues

Criticisms of warranty policy and performance have not been limited to consumers. The Federal Trade Commission Staff Report on Automobile Warranties concluded:

> The evidence available to the Commission indicates that the performance under the warranties has fallen short of reasonable expectations.[18]

But interestingly, although the alleged poor performance was by definition the result of dealers' actions, the report placed almost total responsibility on the manufacturers.

According to the report, poor performance at the dealerships was attributed to manufacturer domination resulting in inadequate compensation to dealers; repairs refused because of the inadequate compensation; poor quality control at the factory; manufacturers "pushing" too many cars through dealerships thus overloading facilities and inadequate compensation for pre-delivery

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[18]Federal Trade Commission Staff Report on Automobile Warranties, p. 58.

inspection. Moreover, the report concluded that the "long" warranty was simply used as a device to sell cars and the manufacturers never had any intention of honoring these warranties.

As a result of the Staff Report, hearings, and consumer criticisms; warranties have become the focal point of many public policy issues. All of the public policy issues have dealt with the following question. What should be done about warranties? But the issues themselves have arisen in two major areas of consumer protection and the competitive effects of warranties.

Consumer Protection

Operating under the assumption that consumers are not adequately protected by warranties, many legislative remedies have been offered to improve warranties from the viewpoint of consumers. These remedies have been directed toward improving the terms of warranties and improving performance. Each of the remedies has raised a series of additional questions.

For example, feeling that warranty terms are inadequate, many suggestions have attempted to deal with the problem. Some have suggested that no express warranties should be allowed, and hence the entire matter of warranty liability should be handled through implied warranties. Others have suggested that minimum warranty legislation should be required. Others have focused on re-writing

warranties. In each of the suggestions, serious questions of warranty provisions have arisen. How long should warranties be? What parts should be covered? How much of the costs should manufacturers pay? How many locations should be available? What sort of conditions should be imposed by the agreement?

Improving performance has been the other main object of suggestions. Many questions of public policy are involved, including: Should government require warranty inspection centers? Should government require plant inspections? Should mechanics be licensed? Should manufacturers be required to pay dealers more? Should sales and service be legally separated? Should government toughen court enforcement? Can class actions serve the same purpose?

Competitive Effects

The second major area of public policy issues concerns an assessment of the possible anti-competitive effects of warranties. In the opening of the Automobile Repair Hearings, Senator Hart concluded:

> . . . it is important to understand that warranties cannot be considered as a separate subject matter. They appear to be an integral part of the entire system of repair and parts distribution and can only be assessed by the role they play in that total picture.[19]

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[19]"Automotive Repair Industry Hearings before the Subcommittee on Antitrust and Monopoly of the Committee on the Judiciary United States Senate," Ninetieth Congress, Second Session Pursuant to S. Res. 233, Part I, statement by Senator Philip Hart, December 3, 4, and 5, 1968. U.S. Government Printing Office, Washington, D.C., 1969, p. 3.

The possible effects of warranties on dealers, independents, mass merchandisors and the entire service industry has thus become an issue.

Disappointingly, all of the inquiry and remedies offered earlier have failed to reveal any consistent concept of a warranty, criteria by which warranties should be judged, their actual affect on consumers, or any reasonable means of reaching definitive guidelines for business firms. Warranties have therefore continued to represent problems for manufacturers, dealers, consumers, legislators, courts and others.

Nature of the Research

Rather than simply identifying warranty problems, the ultimate aim from any perspective is finding solutions. Hence many have focused on the following question: What should be done about warranties?

This research began with the above question. But it became obvious that any lasting solution to warranty problems would not be solved by an answer. A real stumbling block to warranty problem solutions has related to asking the wrong question. The major question is how should firms' responsibilities be legally defined? The nature of the thesis is that significant problems associated with warranties are not directly problems of warranties themselves, but are rather, problems of firms' responsibilities. The following research therefore relates to firms' responsibilities rather than to warranties per se.

The subject matter is shaped by the interaction of two basic directions of thought and effort. First, the marketing discipline today is being challenged to define the nature and scope of firms' responsibilities. Second, firms' responsibilities are also being defined through warranties and changes in the law. This dissertation represents an effort to combine theory and practice in both marketing and warranty law. In broad terms, this research seeks a normative definition of firms' legal responsibilities which are presently under the scope of warranty law.

Any treatment of responsibilities must ultimately boil down to questions of who is responsible to whom, for what, and under what circumstances. Yet, out of all firms' responsibilities, the warranty classification presented earlier serves as a device for identifying certain types of responsibilities. The automobile warranty previously noted identifies one particular set of responsibilities which form the object of this research.

Research Purpose

The overall purpose of the following research is to assess the nature and extent of the automobile manufacturers' responsibilities for defective products and to suggest what those responsibilities should be. The direct concern is for manufacturers' legal responsibilities to consumers, for defects which result in product loss, for products distributed through manufacturer-dealer systems.

The specific purposes of the research are:

1. To describe the manner in which manufacturers' responsibilities for defective products are defined by warranty law, legal practice, marketing theory, and marketing practice.

2. To describe the general direction in which warranty law, legal practice, and marketing theory are moving to define and execute responsibilities for defective products.

3. To describe the general nature and operation of present marketing systems which are designed to deal with defective products and to demonstrate the relationship between the definition and execution of responsibilities within these systems.

4. To identify the inadequacies of warranty law, legal practice, marketing theory and marketing practice in defining and executing responsibilities.

5. To appraise the general direction and effort of warranty law and legal practice toward improving responsibilities and correcting inadequacies.

6. To suggest improvements in the statement and execution of firms' responsibilities under law.

Approach

In line with the research purposes, any assessment of inadequacies or improvements requires a reference point. Thus, a given definition of responsibilities can be formed

from the viewpoint of a single manufacturer, dealer, or consumer; a group of manufacturers, dealers, or consumers; or any other person or group. The general approach of the following research is that of a public policy viewpoint. Hence, the assessments of inadequacies or improvements will be determined by their desirable or undesirable effects on consumers in total.

The research proceeds in three stages: (1) a description of responsibilities under marketing and the law; (2) a synthesis of the preceding descriptions to form a basic model of a system to treat defects; and (3) an analysis of the operation and likely results of the model in order to suggest improvements.

A literature review of the Uniform Commercial Code and recent court decisions provides the necessary elements for the description of firms' theoretical legal responsibilities. Various documents, reports, hearings, and expert testimony form the more practical application of legal and marketing practice to firms' responsibilities under law. Finally, the theoretical approach of marketing toward liabilities is treated by a review of the marketing literature.

A model of present warranty systems is developed from a synthesis of the preceding material. The model is designed to demonstrate the major components, operation, and controls of a system to treat defects. The model will

also treat the operation and likely effects of system changes on consumers.

Based on the general operation and structure of the model, means of improving the definition and execution of firms' responsibilities under law are presented.

CHAPTER II

DEFECTS AND LEGAL CONSIDERATIONS

Defective Products

Everyone has some notion or judgment as to what constitutes a defective product. The connotation of defect has relied on such judgments. But if manufacturers or others are to be held legally responsible for defects, it is necessary to be more precise.

What then is a defective product? There is no single definition that is satisfactory for all purposes. In understanding warranty law, it is useful to consider several definitions. A defective product can be defined as:

1. An identifiable physical condition in the product that renders it unreasonably dangerous to persons or property under normal or prescribed conditions of use.

2. An identifiable physical condition that has fallen short of the intended set of manufacturer's conditions.

3. An identifiable physical condition that has fallen short of the reasonable expectations of the individual customer who purchased the product.

4. A product whose use has failed to satisfy the reasonable expectations of the individual consumer who used the product.

The above definitions are neither mutually exclusive, nor collectively exhaustive. However, each of the definitions emphasizes certain characteristics about the nature and concept of a defect.

First, as all of the previous definitions imply, there is nothing inherently defective about the physical condition of a product. In the first definition, a product is only unreasonably dangerous to persons or property if it is (or will be) used by someone. In the second definition, a physical condition is only defective if it does not meet a condition imposed by the manufacturer. The third definition treats a physical condition unacceptable to the purchaser; while the fourth definition more broadly treats the user. But, in and of itself, a physical condition cannot be identified as defective without a judgment relative to safety in use, set conditions, or reasonable expectations of consumers.[1]

Second, what <u>is</u> defective about a product is that certain undesirable consequences stem from its use or purchase. In the first definition, an injury (actual or potential) to persons or property is identified. The

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[1]This allows a curious statement that consumers may actually want and demand "defective" products. For example, factory defects or "seconds" are commonly sold at reduced prices in large quantities.

second definition implies a loss to the manufacturer.[2] The third and fourth definitions imply a loss to the purchaser or user but do not specify the loss. Thus, if expectations range over safety, dependability, durability, form, style, price or other factors, a number of undesirable consequences may occur in violation of these expectations.

Third, undesirable consequences associated with a product may only occur to certain individuals. Thus, the manufacturer, or intermediary, or purchaser, or user may suffer a loss. Moreover, only certain individual users may suffer losses from the same physical product. For example, a drug under normal or prescribed conditions may be beneficial for 99 per cent of users. Therefore, to the extent that individuals' expectations differ, the same product may prove undesirable to many different persons.

For the above reasons, it is conceptually best to refer to a defect by the last definition--a product whose use has failed to satisfy an individual consumer. But, for this dissertation, the importance of the previous definitions rests in the extent to which each is incorporated into law.

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[2]And possibly a loss to others who share the manufacturer's intended set of conditions if the manufacturer does not correct the condition or destroy the product.

Defects and the Law

As a conceptual matter, incorporating any of the previous definitions into law must have a purpose. Of concern here is the extent to which any use of the previous definitions affords protection to consumers.

One commonly hears, as a statement of public policy, that consumers should somehow be legally "protected" from defective products. If this is indeed a desirable goal, it is important to realize the nature of protection afforded by law and the implications of using any particular definition of defect.

All law is written in anticipation of events. To protect consumers from defective products, the law must therefore, before the fact, decide what a defective product is. But, the very nature of law, and the previous discussion of defective products, reveal several immediate conclusions about the ability of law to actually protect consumers.

In the first place, what is defective about a product is that it causes undesirable consequences to its purchaser or user. Therefore, if a product can be identified as defective before it causes harm to consumers, the goal of consumer protection is enhanced. Product inspections to prevent defective products from reaching consumers is, therefore, theoretically possible. Moreover, direct intervention by government into a "free" production process under such circumstances is better justified. No business

should argue their rights to knowingly distribute products that cause physical harm to unknowing[3] consumers.

It should be recognized, however, that of the previous definitions of defects, only the first definition of unreasonably dangerous to persons or property affords protection before injuries. All of the remaining definitions only allow a product to be identified as defective after it has reached consumers and caused damages. The importance of this point deserves further consideration.

Protecting Consumers Before Losses

The phraseology of "unreasonably dangerous to persons or property" forms a typical legal definition of the term defect. Stopping injury to persons or property is thus the rationale for the definition.[4] Finding a defect before injury is possible theoretically where it is likely that injury would result even if the product is used under normal or prescribed conditions. Proof of a defect can, therefore, be supplied by an examination of the physical product and a presumption of the manner and consequences of its use.

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[3]Various readers may disagree about whether or not "unknowing" is a necessary stipulation. This issue turns around certain products such as cigarettes whose very use under "prescribed conditions" causes harm. The issue, however, has more relevance to problems of design defects than "production errors" which are closer to the topic at hand.

[4]There are other applications, however. The definition can be used after injuries as will be discussed later.

But if a defect is identified by any of the remaining definitions, consumers must actually sustain losses. Superficially, the reason is that the definitions use the past tense of the wording. Thus, it is only after a product has fallen short of a set of conditions or consumer's expectations that the definition applies. But a moment's reflection reveals that the distinction is more than superficial. For if one of the remaining definitions is applied before consumers sustain losses, then problems in implementation occur and serious issues of public policy are raised.

Implementation

In the second definition, the use of the "intended set of manufacturer's conditions" would not assure protection to consumers for three reasons. First, certain manufacturer's intentions may not be desirable which is a partial reason for the existence of a law. Second, in one sense, any physical makeup of the product is an intention of the manufacturer. Hence, statistical quality control systems by their very nature produce percentages of "malformed" products. And third, consumers may actually want particular products at reduced prices, reemphasizing the point that a defect is not singularly related to the physical product. The alternative, however, is that government form its own set of specifications. But, this presents the formidable task of writing all product designs into law.

Implementing the third and fourth definitions presents additional problems. Here the government must place itself in the position of stating, a priori, all expectations that individual consumers might have in relation to the physical product or its use. Yet implementation is of minor importance when compared with the public policy implications.

Public Policy

Actions by government declaring products defective before damages, must by their very nature, deal with one or more of the following propositions. First, government can determine a consumer's product needs better than the consumer himself. Second, government can determine individual consumers' needs better than businesses can or are willing to. Third, government can judge products better than consumers. Fourth, government can represent consumers more accurately and efficiently than individual buyer response. Complete acceptance of the above propositions involves a rejection of the marketplace's ability to allocate resources properly.

While government has not been willing to reject market processes completely, many regulations have been designed to deal selectively with potential injuries. Thus, implicitly, government has been willing to take the position that, for physical injury, government <u>can a priori</u>, (1) determine consumers' wants better than some businesses can

or are willing to, as in the case of deceptive practices, (2) determine an individual's needs better than the individual himself, as in the case of narcotics, (3) judge products better than consumers, as in meat inspection, (4) represent consumers more efficiently and perhaps as accurately as individual buyer response, as in minimum safety requirements.

But physical injuries occupy a special position in consumer protection. Because it can be assumed that consumers do not seek injuries, and because such injuries do not easily lend themselves to monetary compensation, efforts to protect consumers should find few limitations to the degree of governmental involvement. However, for other types of losses, the degree of involvement and the nature of government's role changes. Specifically, product loss and legal attempts to protect consumers reveal a different set of problems.

The first chapter identified the thesis concern for manufacturers' legal responsibilities for defects which result in product loss to consumers. It is appropriate here to examine in fuller detail this concern and its relevance to the previous discussion.

Product loss by its very nature affects the product's owner and is more easily identifiable in terms of its costs. Basically, repair or replacement of the physical product plus any added inconvenience represents a reasonable upper limit to costs. And significantly, it is the

purchaser (not user) who sustains the actual or potential costs. Thus, the third definition of identifiable physical conditions which have fallen short of reasonable expectations of the purchaser identifies the defects that are the subject of the thesis.

The continual public policy problem in protecting consumers from product loss is that of excessive intervention in market processes. Historically, the regulation of the economy has been based on the concept of a market enterprise system. Within a free society, consumers as well as producers exercise a great amount of individual choice in both consumption and production processes. Freedom to make one's own decisions also implies a freedom to make mistakes. Hence, both producers and consumers bear losses in a market system. Producers bear losses in making products that are not purchased. Consumers bear losses in purchasing products that later fall short of expectations.

Because of the long standing governmental position favoring an enterprise system, the general approach in law has been to treat product loss <u>after</u> its occurrence. Intervention, on behalf of consumers <u>before</u> product loss, preempts consumers' individual choices and the benefits of the market system itself. Thus, the efficiency of the legal system to reallocate resources with the purpose of consumer protection is important. It could be that the costs of reducing losses through law far exceeds the costs

of market alternatives. The implications of treating losses after their occurrence are discussed in the following section.

Protecting Consumers After Losses

Laws of negligence, which determine if a given loss is the result of a defect, provide examples of treating losses after the occurrence. But the legal definition of defect is limited in its application. A major difficulty of a strict legal definition is that other "defects" which consumers regularly find in products are not included. For example, a car that runs improperly, a faulty air conditioner, or a dented fender may not be unreasonably dangerous to persons or property. Thus, product loss, which is the subject of this dissertation is not included nor legally defined. A legal definition of defects covering product loss must treat physical product properties whose resultant loss is neither property loss nor physical injury.

Because losses have already occurred, the elements of an alternative approach are present. Rather than defining a defect and enforcing compensation for losses as a result of defects, a major emphasis in law has been to focus on losses instead. Theoretically, it is possible to proceed in the following manner. If a consumer experiences a loss, the legal process is designed to determine whether or not the loss is justified. Writing law to cover losses thus escapes many thorny issues of defining defects a priori. Identifying a product as defective rests on identifying a loss. The loss can be either actual or

potential. But writing laws to take effect after an actual loss can avoid explicit defect identification. If law adequately treats the losses, there is no need to define a defect. However, an implicit definition is present or can be inferred.

It is in the above manner that law can be said to "cover" defective products without actually framing a definition before the occurrence of a defect. Much insight can be gained into law when it is recognized that the law is applied to defects without an actual definition. For this dissertation, the importance of the above approach is that it is embodied in warranty law.

Defects and Warranty Law

Where a consumer experiences a loss, warranty law is designed to determine whether or not the loss is justified. But, because legal codification must precede losses, the task of warranty law involves basically three matters. First, the law must anticipate what losses will be covered. Second, a means for identification and compensation for losses must be devised. Third, someone must bear the cost of compensation.

For this thesis, the above task is conceptually rather simple. The loss to be covered is an identifiable physical product condition. Compensation for the loss involves a repair or replacement of the product. And, the interest is in the amount of the manufacturer's legal liability for such compensation. Thus, a definition of

manufacturer's legal responsibilities to consumers for defects which result in product loss can be examined by an answer to the following question.

In the event that the physical product condition proves unsatisfactory at some time following purchase, and where the only loss to the purchaser is measurable by repair or replacement of the product plus inconvenience, how are the manufacturer's legal responsibilities to the purchaser defined? Or stated in a slightly different fashion; what are manufacturers' legal responsibilities to owners in the event that the physical product condition proves unsatisfactory at some time following purchase and the only result is product loss? The answer to the question, however, is not as simple. While the next chapter will treat the actual process of warranty law in fuller detail, the interest here is in explaining the basic approach.

Warranty law, in and of itself, does very little to define any responsibilities. Instead, the basic approach is to let the parties to the purchase contract decide what these responsibilities should be. Then, within the context of the parties' decisions, such responsibilities are sanctioned by law.

A better understanding of this process is gained when it is realized that warranty law grows out of contract law. In contract law, parties are free (within certain limits), to bargain about anything they wish. Although

many modifications and changes have been made in warranty law, the basic premise is that parties to a contract can freely bargain over their respective responsibilities in the event of a defect. Thus, they can decide what a defect is, how it will be identified, what form and amount of compensation will be granted, and who will pay. Historically, this process of bargaining was more easily justifiable when it occurred on a face-to-face basis, when both persons were entirely aware of what was occurring, and when product attributes were more easily assessable.

Modifications in warranty law have been made because many of the above conditions are no longer realistic. Moreover, limitations have been placed on the complete freedom of the parties to bargain over all responsibilities.[5] But it still remains that the parties themselves exercise a wide variation in their decisions as to what to do about defects.

An Assessment

Since warranty law treats losses after their occurrence, many have concluded that the barn door is being shut after the horse is out. Moreover, letting the parties themselves decide how to treat losses has raised serious issues of consumer protection in light of unequal bargaining strengths. Because physical injuries can also be

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[5]Significantly, these modifications have come in the form of implied warranties to be discussed in the next chapter.

included in the bargaining process, warranty law has been assailed as being inadequate in those cases where sellers have successfully reduced their liability. For this thesis, however, the concern is only for product loss which has far different properties than other losses.

The previous material has suggested that potential losses such as physical injury might be best treated before they occur--primarily, because forms of compensation do not adequately measure or replace such losses. But product loss is more easily measurable and can be compensated. The assessment of the rationale for warranty law with its a posteriori approach therefore rests with the legal adequacy of treating losses after their occurrence.

Treating losses after their occurrence is a far different approach than directly attempting to stop losses before they occur. Law operating in this fashion potentially offers protection to consumers in two forms. First, if consumers experience losses; attempts can be made to compensate the individual for such losses. Second, there is the theoretical possibility that future losses can be prevented.

Prevention is accomplished if those persons causing losses are held liable and hence persuaded to alter their behavior in the future. Thus, stopping losses before they occur can be accomplished by the actual or presumed treatment of losses after their occurrence. In other words, consumers can presumably be protected by law in the sense

that past losses are regained and future potential losses are reduced.

But for product loss, the adequacy of law remains to be tested in three areas. First, is the consumer adequately compensated for losses incurred? Second, does such compensation reduce future potential losses? And third, does this total process cost consumers more than it is worth?

While partial answers to the above questions will be supplied in later chapters, several comments are appropriate here.

First, the above questions strike at the core of an optimal solution to the problem of defects. Consumers in general bear the total costs of both a business and legal system designed to deal with defects. Particular losses at a point in time fall on an individual consumer. But those losses can be shifted to manufacturers, dealers, or other consumers. If costs are shifted by law, legal costs become part of the system's administrative costs. But these costs are reflected in the form of prices, taxes to run a court system, legal fees, or all three. Concerns of law must, therefore, treat the efficiency of both the market system and the legal system in protecting consumers.

Second, the above questions cannot be answered independently. The adequacy of legally enforced compensation for an individual consumer rests in part with the cost of a legal solution. Reducing future potential losses,

moreover, rests with the "threat value" of law which is a function of who pays for compensation and how much. Because product losses have a reasonable upper limit, the costs of law and the total system are relevant concerns.

Finally, it should be recognized that the purpose of this dissertation is not to supply complete answers to the above questions. Rather, the purpose of the dissertation is to identify and evaluate changes in warranty systems and to seek improvements. These improvements need not be optimal. But, importantly, many suggested legal improvements may not be as beneficial to consumers as present systems. It is useful, at this juncture, to reconsider the three earlier questions.

First, are consumers adequately compensated for losses incurred? In answer to this question, it is necessary to identify the relevant losses. For this dissertation, these losses are product losses. Additionally, it is necessary to determine whether or not consumers are, at present, legally compensated for all or a part of product losses. But whether or not an individual consumer recovers all or part of his product losses does not represent an adequate test of the law. These matters will be discussed in Chapter III.

Second, does compensation paid by others reduce potential losses? In answering this question, it is necessary to first determine an answer to the previous question. Thus, if no compensation is paid, it cannot

reduce losses. However, the converse is not true. Even if compensation is made, it is important to determine who pays, and how much, and whether such payments would reduce losses or change prices or whatever. Thus, the material of Chapter III and Chapter IV, which treats present systems, supplies tentative conclusions of these relationships.

Third, the question of the total costs to consumers is important. But rather than identify the total cost itself, which would involve an optimal solution, the purpose here is to assess changes in total costs with respect to changes in present systems. Hence, in one sense, the benefits of a change should be weighed against the costs. But, as will be demonstrated in later chapters, both the benefits and costs are probabilistic. Thus, the question of improvements can be expressed conceptually in decision theory terms. Basically, interest centers on a Bayesian approach which allows subjective matters of public policy to be incorporated into a decision.

CHAPTER III

WARRANTY LAW AND LEGAL PRACTICE

Introduction

The previous chapter has identified the basic theoretical approach of warranties in treating product losses. But the approach itself does not permit conclusions as to the adequacy of law to protect consumers. How are manufacturers' responsibilities actually defined? Can consumers be legally compensated for all or a part of product losses? Is such compensation adequate? Does paid compensation reduce the potential of future losses? Is the law or legal process presently inadequate? What improvements if any are needed? This chapter seeks answers to the above questions.

Several clarifying comments on this chapter's organization and purpose are appropriate. First, to develop a fuller understanding of warranty law and possible changes, this chapter provides a summary of the present state of the law as it is actually applied and possible inadequacies. The chapter does not seek a lawyer's definition, but rather develops an understanding in layman's terms. The following discussion simplifies the actual

legal process. Second, while the primary interest is in the special manner in which defects are treated under warranty law, other laws are mentioned to provide perspective. Third, the chapter is devoted to determining basic premises of public policy vis a vis product loss and the practice of legally treating such losses. Fourth, the chapter considers manufacturer's responsibilities under warranty law with a view toward the changing legal directions of defining and executing such responsibilities. Fifth, a discussion of legal solutions to warranty problems is developed.

The Warranty Process

In today's marketplace, a simple unambiguous definition of a warranty is a rare occurrence. The historical evolution of warranties in both law and the marketing process has subjected warranties to numerous interpretations.

The previous chapter identified a warranty as a legally sanctioned "bargaining process" that treats defects. The primary matters of concern here are the bargaining process itself and the resultant legal treatment of defects.

In understanding the law, it is useful to consider warranties in the context of a process[1] through time.

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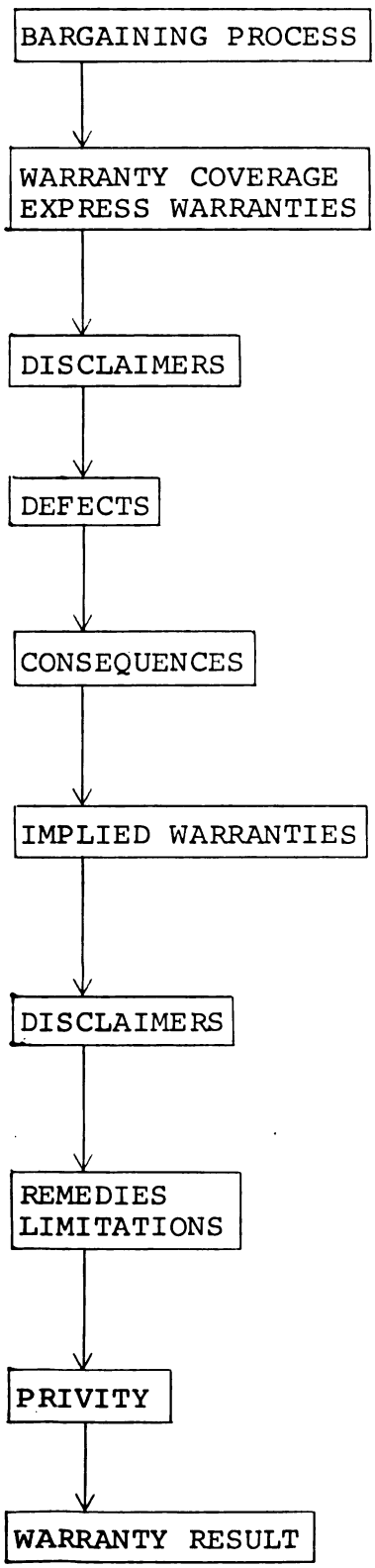
[1]The reader interested in the strictly legal treatment of sales warranties is encouraged to read: William C. Pelster, "The Contractual Aspect of Consumer Protection: Recent Developments in the Law of Sales Warranties,"

The creation and existence of a warranty develops through stages as displayed in Figure 1. In legal terms, the bargaining process provides a starting point with the final warranty result at the end. In between are elements of the process which serve to define both the scope of the agreement and the responsibilities and rights of the parties. The questions to the right of each element represent the relevant legal concerns of both buyer and seller.

Figure 1 indicates that the warranty begins with a bargaining process. As a result, an express warranty may be created subject to disclaimer by the seller. Next, a consideration of defects and their consequences serve to determine the nature of implied warranties that may arise. Implied warranties may also be disclaimed. Finally, available remedies, modification, and the important concept of privity control the results of the legal warranty upon both the buyer, seller and other members of society.

The discussion which follows expands on each of the process elements in Figure 1.

Michigan Law Review, Vol. 64 (May, 1966), pp. 1430-66. Also, the statement of W. D. Hawkland at the Federal Trade Commission Hearings on Automobile Warranties, February 11, 1969, pp. 899-930. The following discussion of warranties is derived mainly from the above sources and the relevant sections of the Uniform Commercial Code, which is the basic body of laws governing warranties. The concept of the "warranty process," however, is the author's and offered here for exposition purposes.



What is the character of the bargaining process?

What can be covered under an express warranty?

Can an express warranty be disclaimed?

What is a defective product?

What are the consequences of a defect?

What can be covered under an implied warranty and in what circumstances?

Can an implied warranty be disclaimed?

What remedies are available to the buyer? Can they be limited?

To whom does all of the above apply?

Figure 1.--The Warranty Process: Legal Considerations.

The Bargaining Process

The concept of a "bargaining process" is central to the legal approach in warranties. Basically, because warranties are part of contract law, the parties to an agreement are seen as forming a bargain with respect to liabilities. Hence, both buyer and seller can, on a face-to-face basis, "dicker" over many terms of sale.[2]

But to a large extent, true formal warranty negotiations in today's marketplace are almost non-existent. Merchandising techniques of self-service, sales by description, one-price policies, and related factors have reduced many "bargaining processes" to little more than a take-it-or-leave-it option on the part of the buyer.

Due to the absence of a formal negotiation, warranty law has developed a "substitute" bargaining process. Technically, warranties can now be created on the basis

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[2]To provide perspective, it may be useful at the beginning to point out an interchange between Commissioner Elman and Dr. Hawkland testifying before the Federal Trade Commission in the matter of the present Uniform Commercial Code. (Dr. Hawkland is a member of the permanent editorial board of the Code.)

Mr. Hawkland: "There is nothing wrong with the Commercial Code. The wrong rests in the fact that we don't have adequate procedures to enforce the remedies that the code gives us."

Commissioner Elman: "I also suggest to you that the Code is unrealistic and to some extent irrelevant, because it assumes that people are bargaining. There is a buyer and a seller and they are haggling over the terms of the contract. That isn't the way it works. Let's not kid ourselves that that is the way it works. When you go to buy a car you don't haggle over the terms of warranty. It is not bargaining, not a contract." Federal Trade Commission Hearings on Automobile Warranties, p. 888.

of representations made by the seller, where the effect of such representations is to induce purchase.[3] In other words, a seller can make a representation or statement that is judged to form the "basis of the bargain." The "basis of the bargain" must mean that the buyer or any reasonable man would have found the representation or assertion to be reliable.[4]

Historically, to create a warranty the seller must have had the specific intention to do so. Legal measures of intent required that the seller explicitly use such words as "I warrant that . . ." or "I guarantee that . . ." Today, however, warranties can be created without the use of formal words. Hence, the representations themselves are the court's direct concern.

Various types of representations, and matters that representations themselves include, form the basis for warranty coverage.

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[3]It may even be that the requirement that the representation inducing purchase is not necessary in all cases.

"For example, a buyer may purchase a factory-packaged drill bit in a transaction in which no express warranties were created at the time of sale, and then, upon opening the box in his home and reading the enclosed instructions, discovers that they clearly indicate that the bit will cut through concrete. The comment to section 2-313 suggests that if the tool will not in fact make a hole in concrete, he could recover damages for breach of an express warranty, although the statement inside the package did not in any way induce him to buy the bit." Pelster, op. cit., p. 1433.

[4]That is, whether the statement could be interpreted to have reasonably induced the buyer to act. Ibid., p. 1432.

Warranty Coverage--Express Warranties

In determining what is covered by a warranty, it is useful to view two major categories of warranties; express and implied. In reference to Figure 1, it can be said that the bargaining process gives rise to express warranties. Implied warranties, which are different in nature, will be discussed later.

The legal phraseology of an express warranty reads that it can be created by description, sample, or affirmation of fact.[5] Moreover, in general an express warranty can cover much more than the physical product. Thus, the seller can create an express warranty through activities such as labeling, oral statements by salesmen, point of purchase

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[5]Section 2-313. Uniform Commercial Code provides:

Sec. 2-313. Express Warranties by Affirmation, Promise, Description, Sample

1. Express warranties by the seller are created as follows:

   a. any affirmation of fact or promise made by the seller to the buyer which relates to the goods shall conform to the affirmation or promise.
   b. any description of the goods which is made part of the basis of the bargain creates an express warranty that the goods shall conform to the description.
   c. any sample or model which is made part of the basis of the bargain creates an express warranty that the whole of the goods shall conform to the sample or model.

2. It is not necessary to the creation of an express warranty that the seller use formal words such as "warranty" or "guarantee" or that he have a specific intention to make a warranty, but an affirmation merely of the value of the goods or a statement purporting to be merely the seller's opinion or commendation of the goods does not create a warranty.

displays, instructions, sales literature, advertising, or by written agreement. In turn, the warranty may cover the physical product, terms of delivery, performance characteristics, losses stemming from defects, and even the warranty.[6]

An express warranty can therefore be created by practically every form of communication (or representation) by the seller to the buyer. The only restrictions apply to common categorizations of "puffing" or mere "sales talk." But, courts have held sellers responsible for special (factual) claims of safety, quality, or suitability of a particular product.

From the foregoing discussion, it would appear that the warranty covers virtually every circumstance in which the product has not met a buyer's expectations. Such

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[6]From Hawkland's prepared statement:

> This warranty to give a warranty is important where the automobile manufacturer or dealer attempts to escape liability on the ground that its "defects in materials and workmanship" warranty does not cover a contingency that is included in the advertisement. For example, if a new car is delivered in unsatisfactory condition and is not properly repaired by the dealer because the defects are not covered by the warranty, or the dealer cannot find them or simply on the ground that the dealer is unwilling to cooperate, the buyer would seem to have the remedial options of pursuing the warranty terms of the sales contract relating to defects in material and workmanship or the warranty term arising out of the seller's advertising promise to give a warranty respecting defects in material and workmanship. Hawkland, Federal Trade Commission Hearings on Automobile Warranties, p. 908.

complete coverage, however, is rarely, if ever, present for two reasons. First, many items of buyer's expectations may have been omitted in the "bargaining process." Hence, if the seller made no representation on which the buyer might have relied, there can be no express warranty. In a marketplace free of witnesses, moreover, many circumstances giving rise to a warranty may not be provable in court. Second, warranty coverage may be much narrower because a valid disclaimer may exist.

Disclaimers of express warranties involve a basic contradiction in warranty law. It is simply not possible for a seller to make a legal promise and at the same time refuse legal liability. The only solution is to find either the warranty term or the disclaimer valid, and to deny the other. Therefore, the rules and circumstances involving exclusion and modification are of particular importance in determining what warranty exists. Avoiding as much as possible the fine points of law, the following developments are worth noting.

Disclaimers

In the past, some sales contracts made representations on the front of the document, and in fine print on the back, completely negated all such statements. This situation has changed. It is now generally accepted by courts that a disclaimer must be clearly visible in the contract. Moreover, express warranties and disclaimers

will be read as consistent with each other where possible. In those cases where the express warranty cannot be reconciled with the disclaimer, the disclaimer or modification is rejected. However,

> With careful planning, a seller can protect himself to some extent from undesired express warranty liability by employing a written contract intended by the parties to be a final expression of their agreement. In this way, he can preclude the admission of evidence showing that an express warranty arose from representations not contained in the contract. However, it is often impractical to reduce a sales agreement to writing and frequently difficult to convince a court sympathetic to a buyer that a purchaser actually intended even a written contract to contain all the terms of a bargain when some of a seller's affirmations or promises were not included in a document. Therefore, it is advisable for a seller to make no representations in his advertising and sales talk that he is unwilling to warrant as true.[7]

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[7]Pelster, op. cit., p. 1455.

There seems to be some disagreement on this point. Hawkland before the Federal Trade Commission testified "you cannot disclaim an express warranty under the Code." Federal Trade Commission Hearings on Automobile Warranties, p. 889.

But, the original proposed draft of the relevant Code section read, "if the sales agreement creates an express warranty, words disclaiming it are inoperative." Pelster, op. cit., p. 1454.

The present section 2-316 (1) provides:

Section 2-316. Exclusion or Modification of Warranties

> 1. Words or conduct relevant to the creation of an express warranty and words or conduct tending to negate or limit warranty shall be construed wherever reasonable as consistent with each other; but subject to the provisions of this Article on parol or extrinsic evidence (section 2-202) negation or limitation is inoperative to the extent that such construction is unreasonable.

If express warranties cannot be disclaimed, then it would seem that the original drafting of this section should not have been rejected.

Defects

Based on the foregoing discussion, it is now possible to examine the nature of warranty coverage vis a vis defects. Without actually defining defects by warranty law, a definition can be inferred from the warranty process. Warranty law treats a defect as a "product which has failed to satisfy the reasonable expectations of the individual consumer." This definition is similar to the most conceptually correct definition identified in Chapter II.

In warranty law, the bargaining process is used to determine the content of reasonable expectations of an individual consumer. Thus, rather than identifying a product as defective; in law it is a case of a violation of reasonable expectations arising from the bargaining process. Hence, the product is not identified as defective, but rather, in breach of a warranty.

At the risk of overly confusing the reader, it is useful to suggest a rationale for this approach. The rationale for a "bargaining process" treating responsibilities is a result of the implicit definition of defect above and the fact that the law is applied after losses occur.

Because the law must be written before a loss, specifying reasonable expectations becomes unduly difficult. Because the law applies to all product sales, both new and used, regardless of physical condition, price, quality,

style, durability, or whatever; reasonable expectations are virtually impossible to determine before a transaction.

Yet, even if reasonable expectations could be determined, the implications of specifying such expectations are similar to those mentioned in Chapter II. That is, to specify consumers' reasonable expectations before consumers even see the product is tantamount to attempting to stop defects before losses; hence, preempting a consumer choice process. As a result, warranty law by itself, does not define defects, nor does it define reasonable expectations. Instead, the rationale is directed toward discovering what reasonable expectations were present at the time of the transaction.

But, from the seller's point of view, he may be unwilling to assume responsibility for all or any of consumers' reasonable expectations. Under the broad principle of freedom of contract, it can be argued that the desired liability on the seller's part should extend only to those matters to which he agrees. Thus, an all inclusive definition incorporating reasonable expectations is subject to disclaimer by the seller. Yet, the significance of a defect can only realistically be assessed in terms of its consequences.

Consequences

Implicit in the warranty process is the idea that the buyer has suffered a loss. For this dissertation, the

primary loss of concern is product loss. However, for reasons to be discussed later, product loss has not received the same treatment under law as other types of loss. The consideration of other types of losses becomes important in that their treatment provides a direction for potential treatments of product losses.

Because the use of a product may result in other losses, and because it might be assumed that, with a more complete bargaining process, the buyer would naturally seek to include remedies in the agreement; other forms of warranties have come into existence.

For example, a vaccine that proves fatal to the buyer, a furnace that is the cause of a house being destroyed by fire, a faulty part that ultimately is the cause of the entire product being destroyed, or an airplane that simply stops flying may cause the buyer physical, economic, commercial, or psychological loss. But, none of these occurrences may be covered by an express warranty. In such cases, the Uniform Commercial Code provides the machinery for the courts to impose warranties unless it has been clearly established that the buyer is to assume the risks.

Implied Warranties

Implied warranties, sometimes called "imposed warranties," arise out of judicial action in situations where the court deems appropriate. Thus, an implied warranty does not exist in the bargaining process between

buyer and seller, but it may be created by legal process at a later date. The most common implied warranties are merchantability and fitness for a particular purpose.

Merchantability

Warranties of merchantability are essentially in reference to the physical condition of the product. Where a product is bought by description, it has generally been accepted as a principle of common law that the seller is under an obligation to deliver a product that conforms to that description. The Uniform Commercial Code has adopted this approach.[8]

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[8]Section 2-314. Uniform Commercial Code provides:

Sec. 2-314. Implied Warranty: Merchantability: Usage of Trade

1. Unless excluded or modified (section 2-316), a warranty that the goods shall be merchantable is implied in a contract for their sale if the seller is a merchant with respect to goods of that kind. Under this section the serving for value of food or drink to be consumed either on the premises or elsewhere is a sale.

2. Goods to be merchantable must at least be such as

   a. pass without objection in the trade under the contract description; and
   b. in the case of fungible goods, are of fair average quality within the description; and
   c. are fit for the ordinary purposes for which such goods are used; and
   d. run, within the variations permitted by the agreement, of even kind, quality and quantity within each unit and among all units involved; and
   e. are adequately contained, packaged, and labeled as the agreement may require; and

Conceding the possibility that an express warranty might not have arisen, the court may impose a warranty to allow the buyer recovery for losses. The general emphasis of a warranty of merchantability is then to require that where products are sold by description, the actual product that is delivered to the buyer must be substantially like the description itself.

Fitness

A second and very significant type of implied warranty is that of fitness for a particular purpose.[9] This warranty may be created where the product fails to serve thy buyer's intended use. In reference to the earlier discussion of defects, it should be recognized that warranties of fitness allude to defects in the most general sense of the term. That is, the product's use

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f. conform to the promises or affirmations of fact made on the container or label if any.

3. Unless excluded or modified (section 2-316) other implied warranties may arise from course of dealing or usage of trade.

[9]Section 2-315. Uniform Commercial Code provides:

Sec. 2-315. Implied Warranty: Fitness for Particular Purpose

Where the seller at the time of contracting has reason to know any particular purpose for which the goods are required and that the buyer is relying on the seller's skill or judgement to select or furnish suitable goods, there is unless excluded or modified under the next section an implied warranty that the goods shall be fit for such purpose.

falls short of buyer's expectations. However, the application of warranties of fitness is somewhat more restrictive.

> In a Code jurisdiction, the existence of a warranty of fitness for a particular purpose is always a question of fact and depends only upon a finding, from all the circumstances surrounding a given sale, both that the seller of the goods in question had reason to know the buyer's intended use for them (although the seller need not have had actual knowledge) and also that the buyer did in fact rely upon the seller's judgement in choosing a product to fulfill that purpose.[10]

In other words, the warranty of fitness is not automatically created because the buyer did not find the product satisfactory for his purposes. However, if the seller knew what the buyer wanted to use the product for; and it appeared that the buyer was relying on the seller to select the right product; the product must then have been suitable for the buyer's purposes. For example, the failure of an automobile to be suitable for a stock car race could be covered by a warranty of fitness if the buyer relied on the seller to furnish a car fit for that use. However, the unsuitability of the product alone is not sufficient to create a warranty of fitness.

Other Implied Warranties

There may be in addition to merchantability and fitness other implied warranties that come from the "course of dealing or usage of trade." Generally, warranties of this type allow the agreement of the parties to be interpreted by the context of the entire transaction

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[10]Pelster, op. cit., p. 1440.

and practices of the industry rather than a final written form agreement. For example, the buyer may have understood that certain risks of product quality were to be assumed by the seller. In other words,

> The meaning of the agreement of the parties is to be determined by the language used by them and by their action, read and interpreted in light of commercial practices and other surrounding circumstances. The measure and background for interpretation are set by the commercial context, which may explain and supplement even the language of a form or final writing.[11]

Disclaimers

The next step of disclaimers in the warranty process illustrated in Figure 1 produces an obvious question. Can implied warranties be disclaimed? There is no universal answer to this question.

One of the greatest difficulties in discussing what warranties may exist in a given situation is the fact that defects and the type of loss determine, in part, whether a provision of the Uniform Commercial Code is applicable.

While the disclaimer of an express warranty by the seller creates a basic contradiction in his actions; disclaimers of implied warranties are not as easily reconcilable. Because implied warranties do not arise within the bargaining process, but rather, are imposed by the court; it is quite possible that the implied warranty may cover

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[11]Hawkland's Statement before the Federal Trade Commission Hearings on Automobile Warranties, p. 914.

liabilities that the seller did not intend to assume. That is, the seller may assume liabilities on the basis of an implied warranty which no reasonable construction of his actions or representations might allow.[12] For example, an implied warranty opens the possibility that a seller of a relatively inexpensive component in a production process could be held liable for the tremendous costs of "down time" in the event his product failed. Or, an implied warranty may allow an injured person to be compensated for hospital and other expenses that arise in conjunction with the use of the seller's product, regardless of fault.

Because persons can bargain contractually in almost all matters which affect them, it is not inconsistent to assume that they can also reach a contractual agreement as to the liabilities that each will have if someone is physically hurt or some financial disaster occurs. Implied warranties, however, are by definition not part of the contractual agreement reached between the parties at the time, but are later read into the agreement.

Later interpretations of the agreement, then, can be supported on two grounds. First, that the bargaining process, being rather incomplete, needs the addition of liabilities that the buyer thought the seller really

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[12] If, in fact, the actions could be reasonably construed to cover the event in question; the actions themselves may rise to the level of an express warranty.

intended to assume. Second, that there are certain liabilities that all sellers must or should assume regardless of their intent. In this context, implied warranties expand the whole question of products liability into the area of contract law. Before developing the conditions of an effective disclaimer, a few general comments are in order.

First, it should be obvious that many cases which involve defects are not only covered by warranty but also fall under a host of laws in the area of product liability. Product liability other than warranty includes laws of fraud, negligence, and a developing doctrine of strict tort liability.[13] The following discussion will treat warranties primarily and make only minor mention of the other statutes.

Second, there exists a great deal of uncertainty even among legal authorities as to what may be covered and disclaimed in any particular situation. Because product liability regulations have been changing rather rapidly in recent years, it is difficult to be absolutely precise in this area of law. The purpose of the following

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[13]A person is said to be strictly liable if he is legally responsible for the consequences of his conduct whether or not it was negligent. In the context of consumer protection, a seller is strictly liable if he must respond in damages to one who sustained an injury due to a defect in the seller's product although the presence of the defect cannot be attributed to the seller's negligence.

John A. Sebert, Jr., "Products Liability--The Expansion of Fraud, Negligence and Strict Tort Liability," Michigan Law Review, Vol. 64 (May, 1966), p. 1369.

discussion is merely to point out, in general terms, what the present state of the law provides.

Finally, because of the rules regarding the sufficiency of evidence, statutes of limitations, and the remedies that are available under each of the relevant laws, changes in warranties may occur as a result of the relationships they bear with other laws. Therefore, they must be assessed in terms of the other statutes if a reasonable conclusion as to what should be covered by warranty is reached.[14]

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[14]For example, there is reasonable support for the argument that the expansion of warranties into the area of products liability has been created by a lack of other laws to deal adequately with the present day concept of fault. Whether warranties should be developed further in recognition of this need or the other laws should assume this position is a very serious issue. Warranties have grown out of the area of contract law with all of the problems of the case law dealing with contracts. Should not the subject matter be properly treated as a criminal action and therefore under the laws of tort? In this regard,

> Many of the new products and so-called improvements in existing products are beneficial when viewed from the standpoint of the general good. Often, however, the benefits of the many come at a high cost to the few, for there are increasingly more opportunities for mishaps, not only in the manufacturing process, but also in the marketing and use of the finished products.
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> Today, a great many more persons than ever before are being victimized by the dangers inherent in the use of consumer durable goods as well as products intended for intimate bodily use--foods, drugs, and cosmetics. This substantial increase in the incidence of unintended harm occurring in the course of, or as a consequence of, the use of products, together with the enhanced social concern for the victims of our modern devices, is bringing about a reexamination of the principles formerly utilized by the courts for shifting losses. A prerequisite to the shifting of losses on a tort theory has commonly been a finding of fault on the part of the

Generally speaking, an implied warranty can be disclaimed if the buyer is fairly and reasonably notified that a risk, otherwise on the seller, has been shifted to him.[15] Under the Uniform Commercial Code this has meant that the disclaimer must satisfy the following conditions. First, the contract must expressly warn the buyer of the risk that he is assuming. Second, if after an examination of the product the buyer accepts the product, the seller is not liable for any defects which that examination should have revealed. Third, if it has become obvious in the course of dealing that the buyer is to assume certain risks, the seller is not liable.

> manufacturer or other seller. Until recently, moreover, contractual obligations, the bases of which are to be found in the commercial codes of the various states, have been limited largely to the parties to the sales or sales contracts and have been regarded as obligations that the parties could alter by clearly stating in their written agreements their intention to do so. As the scope of liability increases, orthodox contractual principles of freedom of contract are being qualified, and fault as a prerequisite for shifting losses on a tort theory is being abandoned. As might be expected, when substantial changes are made in the law, and especially when the change is affected by the judiciary by means of a case-by-case development rather than by the legislature, there is much uncertainty as to the ultimate extent of the change. The uncertainty is enhanced with regard to the liability of makers and sellers of products because the recent expansions of the scope of their liability has been the result of the application of two competing, but not necessarily inconsistent, theories--warranty and strict tort.

Page Keeton, "Products Liability--Some Observations about Allocation of Risks," Michigan Law Review, Vol. 64 (May, 1966), pp. 1392, 1330.

[15]This is subject to the doctrine of unconscionability to be discussed later.

Sufficiently warning the buyer of the risks that he is to assume has been interpreted by the courts in the following manner. All written disclaimer and modification clauses in order to be effective must be conspicuous within the written contract. Therefore, the relevant clause must be printed in a type style or color causing it to stand out from other printed matter.

When the buyer has had an opportunity to examine the product prior to the sale, or has refused to do so, and accepts the product; the seller is not liable for defects that the examination should most reasonably have discovered.

> Because the draftsmen apparently intended that a purchaser's knowledge and commercial experience in considering the effect of his inspection or failure to inspect, it is unlikely that a consumer buyer will often lose the benefit of an implied warranty by virtue of his having had an opportunity to examine merchandise.[16]

The course of dealing may remove the possibility that an implied warranty may later arise.

> By way of illustration, the Code suggests that a vendor's use of an expression like "as is" or "with all faults" is sufficient to disclaim all implied warranty liability unless the circumstances indicate otherwise. However, since these expressions are supposed to "call the buyer's attention" to the fact that no implied warranties exist, it seems that if they are in writing they, too, must be conspicuous.[17]

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[16]Pelster, op. cit., p. 1457.

[17]Ibid.

Disclaimer of an implied warranty, however, is subject to the doctrine of unconscionability. This legal doctrine allows the court to strike down any disclaimers in circumstances where the result is found to be oppressive or brings about surprise results. For example,

> . . . some disclaimers were unconscionable because they attempted to thrust upon the buyer risks that he did not intend to assume. Broad disclaiming language, hidden in the fine print of an adhesive contract, furnishes a common example of such an unconscionable disclaimer.[18]

However, where the disclaimer is conspicuous it does not appear that the courts consider that surprise results may arise. Moreover, a disclaimer is not considered necessarily oppressive by the sheer inequality of bargaining positions of the individuals.[19]

Perhaps an illustration will clarify the foregoing material on disclaimers and conscionable contract terms. The Federal Trade Commission found on its examination of warranties that:

> Virtually every warranty examined included a provision reading substantially as follows:
> This warranty is given in lieu of all other warranties express or implied, including any implied warranty of merchantability or fitness for particular purpose, and all other liabilities on our part, and we do not authorize any one to make any warranty or assume any liability not strictly in accordance with the above.[20]

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[18]Pelster, op. cit., p. 1460.

[19]See Hawkland's statement before the Federal Trade Commission Hearings on Automobile Warranties, p. 920.

[20]The Task Force Report on Appliances, p. 44.

The effect of the material and legal opinion quoted thus far suggests that if these words are conspicuous in large letters in the contract; the buyer is informed of the risks being shifted to him and this does not bring about surprise results or is oppressive.

What the above provision means in more common day-to-day language is that the liabilities for product failure that result in physical injury, property damage, or commercial loss that might otherwise be imposed upon the seller by the Uniform Commercial Code are now being shifted to the consumer with the awareness and consent of the consumer.

Remedies and Limitations

To this point, the discussion of the warranty process has treated the creation and existence of a warranty. Given that a warranty exists and is not effectively disclaimed, two other questions arise. First, what will be done to compensate the buyer for losses in breach of warranty? Second, can these remedies be limited or replaced?

The Uniform Commercial Code, without any limitations, generally allows the buyer to recover all reasonable losses. The common measure used is the difference between the value of the product before and after a defect. In addition, the Code allows the buyer to be compensated for incidental and consequential damage, including property and injury to persons.

However, under the concept of a bargaining process, the remedies given by the Code may not be available to the buyer.

> By virtue of section 2-719, the parties to a sale may agree upon warranty remedies in addition to, or in place of, those specifically provided by the Code. Similarly, they may alter the normal measure of damages for a breach of warranty. Thus, they may agree that a seller can satisfy any warranty liability to a buyer by repairing or replacing defective merchandise.[21]

Thus, many limitations have the effect of a disclaimer in the warranty process.

But limitations, like disclaimers, have the possibility of being found unconscionable and therefore rejected. The Uniform Commercial Code declares that "limitations for consequential damages for injury to the person are prima facie unconscionable."[22] The distinction is therefore that

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[21] Pelster, op. cit., p. 1459.

[22] Section 2-719. Uniform Commercial Code provides:

Sec. 2-719. Contractual Modification or Limitation of Remedy

1. Subject to the provisions of subsections (2) and (3) of this section and of the preceding section on liquidation and limitation of damages.

   a. the agreement may provide for remedies in addition to or in substitution for those provided in this Article and may limit or alter the measure of damages recoverable under this Article, as by limiting the buyer's remedies to return of the goods and payment of the price or to repair and replacement of non-conforming goods or parts; and
   b. resort to a remedy as provided is optional unless the remedy is expressly agreed to be exclusive, in which case it is the sole remedy,

limitation of physical damages under an implied warranty is unconscionable but disclaimer of the warranty itself may not be.

On the other hand, limitations for damages other than physical damages are generally applicable. Courts, although sometimes deploring the use of "adhesive contracts," have nevertheless found them to be conscionable and effective. Moreover, the draftsmen of the Code have not made any explicit requirement that limitations be conspicuous as in the case of disclaimers.

The usual warranty result which follows is then an effective limitation of coverage of damages for all consequences stemming from a defect except those stated by the seller in the written contract.[23]

Privity

The final stage in the warranty process, before reaching a result, deals with the concept of privity. Thus far, the terms buyer and seller have been used to refer to the parties to a warranty. In actual practice,

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2. Where circumstances cause an exclusive or limited remedy to fail of its essential purpose, remedy may be had as provided in this Act.

3. Consequential damages may be limited or excluded unless the limitation or exclusion is unconscionable. Limitation of consequential damages for injury to the person in the case of consumer goods is prima facie unconscionable but limitation of damages where the loss is commercial is not.

[23]With the additional exception in the case of physical injury where an implied warranty has been established against all disclaimers.

however, the determination of who is included in the terms buyer and seller is far from a simple or unimportant matter. The concept of privity aids in answering the question of the persons to whom the warranty applies.

Years ago, the concept of strict privity was followed closely by the courts. Under strict privity only the immediate buyer and seller in the transaction were considered and the law regarding the agreement did not apply to others. But privity rules have been extended to other parties for many reasons.

> A moment's reflection quickly suggests that the privity doctrine cannot be strictly followed. By its very nature a contract is a social institution as well as a private relationship. The law--which is to say, the organized power of society--enforces contracts because and to the extent that their enforcement is in the social interest. All that privity of contract really expresses is the idea that it is usually socially desirable to recognize a relatively greater degree of private interest in a business contract than in say, a crime.[24]

It is well recognized in the field of marketing that the buyer of a product may not be the actual consumer. This is particularly so where products are bought for friends, where adults buy products for their children, and where housewives are the purchasers for their families. Any regulations of products liability that stopped only with the immediate purchaser would be harsh indeed. For example, consider the effect of a drug manufacturer

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[24]Bernard F. Cataldo, et al., Introduction to Law and the Legal Process (New York: John Wiley and Sons, Inc., 1965), pp. 678-9.

accepting liability for his product for a parent but denying liability to the parent's children.

However, because warranties come out of contract law rather than tort law, the privity doctrine has been slow to die as compared to those in tort. The privity doctrine today fixes no significant limits to tort liability for negligence, even if the negligent act also constitutes a breach of contract. However, "privity continues to inhibit the remedies of third parties for breach of warranty."[25]

In determining who is included in the term buyer the Uniform Commercial Code provides:

> A seller's warranty whether express or implied extends to any natural person who is in the family or household of his buyer or who is a guest in his home if it is reasonable to expect that such person may use, consume or be affected by the goods and who is injured in person by breach of the warranty. A seller may not exclude or limit the operation of this section.[26]

As a practical matter, however, it is still difficult to determine just who this third party may be. Consider a case of a businessman who gives presents to his employees and an injury occurs in breach of warranty. In such a case, the judge held that the household referred to, or could be construed to mean, the "office household" and other members of society. Although it is unwise to make a statement that is applicable to all cases, it appears

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[25] Ibid., p. 706.

[26] Section 2-318. Uniform Commercial Code.

that the term "buyer" is now being extended to the logical meanings of customers and consumers which one finds within the marketing literature.

Of extreme importance to marketing and this dissertation is the fact that the privity concept has been extended in the other direction as well. The "seller" is not the immediate seller in many cases but any or all resellers working backward into what may be called the vertical channel. For this reason, a warranty is not merely a matter between an individual buyer and a single business enterprise. Instead, a warranty applies to many people related to the buyer in a prescribed fashion as well as to the entire distribution channel.

A detailed explanation of the reasons for the extension of liability backward from the retailing level are beyond the scope of this thesis. However, the two most common explanations are that the manufacturer is probably in a better position to detect and correct defects in products and the manufacturer is generally more financially able to compensate buyers for losses incurred.

Although the intermediary untimately liable has not been clearly established in law, it is useful to attempt a generalization. While there may be many businesses that design, construct, and distribute a product to consumers; the final manufacturer appears to be the main entity held responsible, even under some very dubious circumstances. To the extent that other developments in

tort law provide case histories in the distribution of risk, the following comments apply:

> Another issue relevant to the scope of a manufacturer's duty is the question of the degree of care which he must exercise in inspecting parts supplied by others and destined to become components of his own final product. The overwhelming weight of authority supports the proposition that a manufacturer of a final product has a duty to conduct reasonable tests and examinations to discover latent defects in components. However, a number of recent cases have gone much further by holding a final-product manufacturer vicariously liable for injuries attributable to the negligence of the producer of a defective component even if the flaw was not discoverable by the use of due care. Expansion of liability in this manner appears to be another modern trend and depends for its justification upon the judicial realization that a consumer normally does not know the identity of a component producer and consequently relies on the reputation and the skill of a final manufacturer.[27]

Not only must the manufacturers provide for discoverable defects, but even if a component producer created a defect,

> . . . the majority of the courts considering the issue have refused to hold a component producer strictly liable . . . largely because the consumer has been considered adequately protected by the final product manufacturer's strict liability for injuries caused by any defect in his assembled merchandise, even a defect in a component made by another.[28]

Further,

> While the courts have been relatively unwilling to burden a component producer with strict liability, it appears that a manufacturer of a final product is not necessarily relieved of strict liability for injuries caused by defects

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[27]Sebert, op. cit., p. 1359.

[28]Pelster, op. cit., p. 1434.

> in his merchandise merely because it has undergone some minor processing after leaving his control. Thus, an automobile maker was held strictly liable for injuries caused by defective brakes although it was not certain that the defect arose in the course of manufacture rather than while the car was being serviced by a dealer just prior to sale. A manufacturer probably remains strictly liable unless the change undergone by his product after leaving his control is very substantial, in which case the subsequent processor would be made to assume the burden of strict liability for any defect in the merchandise as processed, even one which arose at the manufacturing stage.[29]

Thus, the channel implications seem to be that for at least personal injury, manufacturers bear most of the burden. In as much as other forms of loss in the future follow the same path as physical injury, the effects upon the marketing structure could be significant and far reaching.

Warranty Result

The final stage in the warranty process, the result of the warranty action, applies to the final division of losses and costs between the parties.

Manufacturers' Responsibilities and Warranty Law

Based on the warranty process and Chapter II, it is now possible to examine manufacturers' actual warranty responsibilities for product defects. Chapter II identified the thesis concern for certain defects--physical product

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[29]Sebert, op. cit., p. 1379.

conditions that have fallen short of buyer's reasonable expectations and whose result is product loss.

Compensation can be made for product loss. But it is obvious from an examination of the warranty process that the law does not specifically state manufacturers' obligations to consumers. Instead, the manufacturer and the consumer are left to form their own agreement. But it is also obvious that manufacturers rarely transact with consumers in a manufacturer-dealer system. As a result, in actual practice, manufacturers have drafted written warranty agreements which purport to represent the nature and extent of their liabilities. These written warranties are of particular significance to the dissertation.

Manufacturers' Written Warranty Policies

A manufacturer's written warranty to consumers is basically a policy statement that specifies his intended responsibilities for product loss. Chapter I identified such written statements as part of the manufacturer's warranty policy. Chapter I also referenced many of the dissatisfactions and complaints that are associated with these statements. It is useful at this point to re-examine, in fuller detail, manufacturers' written warranties in the context of the warranty process. Of interest here are manufacturers' intended responsibilities as compared to their actual responsibilities under law.

Basically, a written warranty contains a number of terms or provisions. A typical list of automobile warranty provisions and their specific form reads as follows:

1) Defects covered--	factory defects in materials and workmanship on the entire car (subject to exclusions below)
2) Time/use factor--	12 months or 12,000 miles whichever comes first
3) Compensation--	all parts, labor, and service
4) Location--	any authorized service agent (dealer of the same make)
5) Conditions--	validation of service or maintenance, "normal use," first owner only, "genuine parts"
6) Interpretations--	supplied by the dealer or manufacturer
7) Exclusions--	tires, batteries, normal maintenance items
8) Additional Compensation--	none
9) Other express or implied warranties--	none
10) Other losses--	none

From the above, it can be noted that any manufacturer has a wide degree of latitude in stating his intended responsibilities. He could state that he assumes no responsibility for anything. Or, he could reduce or increase the amount of time, compensation, conditions, or any provision. However, does his statement of intent represent a definition of his legal responsibilities under warranty law?

The answer, based on the previous discussion, is no. Were the buyer or a member of his family to be physically injured while using the product under "normal care and conditions," the weight of the evidence suggests that compensation could likely be granted under warranty law. In an actual case,[30] an injured consumer recovered damages regardless of time/use limitations, disclaimers of other express or implied warranties, interpretations applied by the manufacturer and dealer, and limitations to remedies. In short, for physical injury, the above written warranty does not define the manufacturers responsibilities under warranty law.

But the critical question for this dissertation is whether or not the manufacturer can define his responsibilities for product losses by a written statement. The answer is probably yes. In actual practice, however, it makes very little difference. The reason for the confusion of this answer is based in the present state of warranty law and legal practice. But the answer deserves an explanation.

Basically, a manufacturer's written warranty is an express warranty. Legal experts vary in their opinions as to whether or not a written warranty can define the manufacturer's warranty liability for product loss. Avoiding as much as possible the fine points of law,

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[30]Cataldo, op. cit., pp. 89-90.

arguments about liability center around the elements of the warranty process.

While each particular case is somewhat different; to argue that manufacturers' liabilities extend beyond a written warranty, it is necessary to demonstrate, in court, one or more of the following:

1. The manufacturer made certain reliable representations regarding the product that are not included in the written warranty.

2. The representations induced the consumer to purchase the product.

3. The disclaimer of other express warranties is invalid.

4. The product's physical condition produced undue hardship to the consumer.

5. An implied warranty should be imposed by the court to allow recovery.

6. The implied warranty cannot be disclaimed.

7. The remedies of the written warranty are insufficient and should be declared unconscionable.

8. Striking rules of privity is justifiable to allow dealers to create a warranty and other buyers to be covered.

In short, under an express warranty; the consumer's reasonable expectations, which were based on communications from the manufacturer or dealer, were not fulfilled. Under an implied warranty; the court should impose a settlement

because the buyer was not adequately notified of the possibility of a product loss and the loss produced unconscionable results.

Arguments contrary to the above are readily obvious. But, before the discussion gets bogged down in fine points, it should be noted that the question of manufacturers' liability for product loss beyond the written warranty is all but academic. The reason is that in actual practice, consumers rarely, if ever, pursue the matter in court.[31]

As a practical matter, court settlements of warranty disputes are generally too expensive, too time consuming, and too uncertain for consumers. If a consumer owns what he considers a defective product and seeks legal redress; he faces high legal costs, an over-crowded court system, a lack of knowledge and clarity in the law, and the risks that he may not win the case. In the meantime, he can fix the product himself, or "put up" with the defect until the case is settled. Even if the defect in question is covered by a written warranty, but the manufacturer or dealer refuse to settle the matter, few consumers find present legal remedies adequate. As a result of expressed consumer inadequacies, many have sought changes in warranty law and legal practices.

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[31]In fact, no cases for product loss exist. Due to the absence of court cases, the validity of written warranties covering product loss remain unanswered.

Directions of Legal Change

In efforts to answer consumer criticisms of legal inadequacies, several alternatives for change are present. First, changes can be made in warranty law itself. Second, changes can be made in enforcement. Third, the focus of change can be directed toward the provisions themselves. Suggestions to improve warranties have fallen in each of the above areas. There is, in addition, the possibility that one or more of the above alternatives can be combined. However, because each of the changes is based on different assumptions, the following discussion will first treat each separately. Combinations of alternatives will be considered later.

Changes in Warranty Law

Based on the premise that manufacturers' responsibilities are inadequately defined, one alternative is to strike disclaimers or modifications which presently exist in the warranty process. The basic rationale of such changes would be to expand manufacturers' liabilities by removing existing "barriers" to legal remedies. In effect, such changes would leave manufacturers' liabilities open ended in that any reasonable expectation on the buyer's part could be covered by a warranty.

Changes in Enforcement

A second alternative is to change the basic enforcement of present law. Specifically, because court costs tend

to be prohibitive in many cases, alternatives in enforcement seek to reduce court costs to individuals or costs of the entire legal process.

The basic premise of the above approach is that there is nothing wrong with present warranty law. Instead, the primary difficulty with warranties rests in the costs of enforcement as the following discussion records.

> You have to have an accident. You have to have somebody hurt. You have got to make it worth while for some lawyer to take the case on a contingent fee basis. It is exactly that. And you are not going to get somebody who has bought a car and has only $100 damage, a lot of inconvenience, a lot of trouble. He doesn't go to his lawyer, and if he does, his lawyer will say, forget it. I am too busy.
>
> That is what we are talking about. We are not talking about theory, but the actualities.
>
> COMMISSIONER JONES: Warranty won't cover the inconvenience of taking it to the dealer and picking it up and all this kind of thing. This is what we are talking about.
>
> MR. HAWKLAND: Well, the warranty should cover you. You ought to be put and the commercial code says that our remedies are to be liberally construed so as to put you in as good a position as you would have been in but for the breach. I think there is adequate machinery in the commercial code to give you the money you are out of pocket for the inconvenience.
>
> COMMISSIONER JONES: Is it a breach if you have got a squeak and a rattle which annoys you on a brand new car?
>
> MR. HAWKLAND: I think it is a factual question in each case.
>
> COMMISSIONER ELMAN: But you can't make a case out of something like that. You don't go to court on something like that. So, for all practical purposes the Uniform Commercial Code and the courts don't exist. They don't help a man in that situation.

> MR. HAWKLAND: Yes, I agree, Commissioner Elman. The Commercial Code doesn't solve this because it is not a procedural statute, but the error I am suggesting--I agree with you--the error is not in our substantive law . . . . There is nothing wrong with the commercial code. The wrong rests in the fact that we don't have adequate procedures to enforce the remedies that the Code gives us.[32]

In practical terms, the question of reducing cost to individuals requires that the manufacturers' pay all or part of court costs or that class actions be used as a primary means of enforcement.

Changes in Provisions

A third alternative in answering consumer criticisms rests with a direct statement of provisions. Hence, under this alternative government would seek a straightforward statement of manufacturers' responsibilities to consumers. Such a statement could be reached by such a means as a consensus of firms in an industry, Federal Trade Commission rulings, or statutory enactments. It is this third alternative toward which the remainder of this dissertation is directed. The reasons for treating this alternative are discussed in the following conclusions to this chapter.

Conclusions

Warranty law does very little in theory or actual practice to define manufacturers' responsibilities in any

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[32]Federal Trade Commission Hearings on Automobile Warranties, pp. 886-888.

specific sense. Given the wide latitude manufacturers have exercised in specifying written warranty provisions, it is difficult to form generalizations even if such provisions actually represent their liabilities. If responsibilities are identified as the result of each individual transaction, it is impossible to generalize. As a result of warranty law, lack of court decisions, and past actions of manufacturers, a present statement of manufacturers' liabilities is unnecessarily vague.

Yet, any realistic definition of manufacturers' responsibilities rests with a statement of the provisions. In the context of a warranty process, any concept of reasonable expectations must ultimately translate into what defects are covered, what compensation is granted, how long the agreement remains valid, and the like. To lend clarity in the remaining parts of the thesis and to treat other matters, it is here concluded that manufacturers' legal responsibilities for product losses are defined by written warranty provisions.

Yet it is important to recognize another major aspect of warranty law. That is, warranty law is in no way designed to deal with the inequality of bargaining positions. Hence, individual consumers face a total corporation in a situation of bargaining over respective liabilities.

There is absolutely no reason to suspect that, even in face-to-face negotiations, an individual could

influence the corporation's decision as to liabilities. But collectively, consumers do influence the manufacturer through the market process. The only conclusion to be drawn, therefore, is that collective purchase decisions of individuals have a bearing on manufacturer's decisions and liabilities. The critical conclusions in public policy terms follow.

First, because the individual is meaningless to the corporation in decisions of liabilities, consumers as a group are actually doing the "bargaining." With careful planning, a manufacturer can attempt to insure that each individual transaction contains the same statement of liabilities. Hence, any individual's resultant reasonable expectations under law are approximately the same. But, a manufacturer's concern over provisions relates to their impact over a large group of consumers. Thus, although the law allows an individual bargain, bargaining on an individual basis does not occur. Manufacturers' written provisions are a response to market conditions, not individuals.

Second, because definitions of responsibilities ultimately rest with a statement of provisions, the adequacy of the provisions themselves to protect consumers is the public policy issue.

Third, it will be demonstrated that:

1. Statements of provisions play a vital role in the potential performance of a system to repair products.

2. Various statements of provisions are at best confusing and very possibly deceptive to consumers.

3. Manufacturers' abilities to change provisions are potentially injurious to competition at both the manufacturing and dealer levels. In addition, there exists potential to harm competition in other parts of repair industries.

4. Improvements to benefit consumers can be made in statements of provisions.

5. Previously discussed alternatives of changing warranty law or legal practice are not preferable to direct changes in provisions. Moreover, changes that do not treat present provisions directly may not benefit consumers at all. Rather, it is likely that such changes would not improve warranties but only make matters worse.

The first four points above will be treated in later chapters. However, if it is tentatively assumed here that these four points are valid, it is possible to draw conclusions relative to the fifth point. The conclusions which follow treat the directions of legal change previously discussed in this chapter.

Changes in Warranty Law

It is implicit in the arguments of those who favor changes in warranty law that existing provisions inadequately protect consumers. Clearly, if existing provisions were considered adequate, no change would be required. But changing warranty law raises many serious issues.

First, it can be argued that manufacturers' liabilities would not change significantly under express warranties. It is likely that manufacturers would exercise greater care in the possible creation of such warranties. Hence, no real change would be accomplished.

But secondly, if manufacturers' liabilities were extended, either through express or implied warranties, changes in the law are of critical importance. What would be the resultant effect in terms of present provisions? If a one year warranty provision is presently considered inadequate, how many years would be included by striking disclaimers? Similar questions could be asked of the remaining provisions. Of great relevance to this thesis, is the fact that expanding certain liabilities of manufacturers may not be in the public interest. While it can be argued that any given individual may be benefited by a change, public policy must be directed toward the effects on all consumers. For reasons too involved to discuss at this point, it is simply noted that a 50 year warranty, for example, may not benefit the general consuming public. These matters will be discussed later.

Third, the difficulty in changing warranty law without direct regard for provisions rests in the fact that warranty law covers many different products, both new and used, in industrial and consumer markets. And, warranty law covers many different types of losses. Removing legal "barriers" to buyers may mean, for example,

that manufacturers remain liable for commercial losses to other firms on the basis of statements made by an intermediary's salesman. In short, unspecified expansion of manufacturers' liabilities would seriously disrupt present trade channels without regard to many justifiably sound reasons that liability be limited.

The fourth difficulty in changing warranty law relates to problems of enforcement. Simply changing the law will have no desirable effects if indeed the problem rests in present enforcement. If, as claimed previously, present problems are solely in enforcement; there is no need to change the law. But "correcting" the problem of enforcement faces other issues.

Changes in Enforcement

Seeking better enforcement of warranties is a complex issue. To clarify matters, basically three circumstances are present and affect the desirability of this alternative to solve warranty problems. First, both present written provisions and warranty law are inadequate to protect consumers. Second, present written provisions are adequate but these agreements are not being honored. Third, warranty law itself is adequate to protect consumers but written provisions are not. Each of the above circumstances yields a different set of conclusions.

If neither warranty law nor written provisions are adequate to protect consumers, better enforcement is of questionable value. One could argue that enforcing an

inadequate remedy is better than nothing. However, this approach would then be dependent on the extent of the inadequacy. Moreover, there exists the possibility that present provisions and law are not only inadequate, but incorrect. In such an event, better enforcement procedures would do more harm than good.

In any case, the question of a preferred alternative rests with the nature of defined responsibilities. Changing warranty law has many problems previously mentioned. But, because responsibilities are related to provisions, an alternative would be to change provisions directly. A direct change in provisions is thus an approach that potentially lends greater value under existing enforcement than strengthening enforcement procedures.

It makes little sense to strengthen enforcement of a 90 day warranty if a two year warranty is preferable. In similar fashion, little value is gained in enforcing a provision limiting manufacturers' responsibilities to $10.00 of a $200.00 repair bill.

A more justifiable reason for strengthening enforcement exists when present written provisions can be considered adequate to protect consumers. It was previously concluded that this is not the case. But, for the moment, it is useful to consider the argument of those who favor stronger enforcement of existing written warranties.

There is evidence to suggest that manufacturers, along with dealers, have not satisfactorily settled warranty

claims, even under present written agreements. In such cases consumers bear losses measurable by the amount provided by written provisions if actually honored.

It is rarely questioned that performance of a valid contractual agreement or warranty can be legally enforced. The problem of better enforcement, however, revolves around the costs of enforcement.

If no question of interpretation or proof of a breach of written warranty exists, enforcement costs represent the only barrier to buyer recovery. In such cases, class actions may lower costs to individuals and supply a means for recovery which was previously too expensive. Moreover, the threat of such actions would presumably reduce the need for actual court enforcement. But there are inherent weaknesses in the above approach.

First, class action means that a single verdict is applied to all individuals. Regardless of the direction of the verdict, it is unlikely that all parties have valid or invalid claims. Thus, the individual justice of the proper action is lost.

Second, it is necessary for an injured consumer to find others in similar circumstances. If he is the only one with a particular problem, the value of this alternative is weakened.

Third, and most important, is that the basic assumptions of this approach are weak. If written provisions do not clearly specify what is in breach of warranty,

questions of proof and interpretation must be resolved. Their resolution by itself adds to the costs of a court solution. Basically, court enforced performance relative to a standard can be far less expensive if the standard (or provision) is clear and poor performance is easily identified. Hence, a written provision itself may be found inadequate due to a lack of clarity. If, in addition, the previous assumption (that written warranties inadequately protect consumers for other reasons) holds, better enforcement is a weak alternative.

The final premise for better enforcement is that written provisions do not adequately protect consumers but warranty law does. In such cases, another express or implied warranty must be reconstructed in court. But lowering costs of enforcement still faces problems.

First, if costs cannot be significantly lowered, many small warranty claims will still be unenforced.

Second, reconstructing a warranty by striking disclaimers, witnesses, and proof is expensive. The expense is exactly why class actions become necessary in the first place. Improved statements of written provisions would potentially reduce the necessity of this approach.

Third, even where a class action is involved, the concept of a warranty applies to individual's reasonable expectations. In effect, each individual's expectations are then relevant rather than the group's. To extend this reasoning does not allow a class action.

Fourth, very little would be gained in terms of precedent if the theory of warranty law is consistent. Thus, finding that a particular provision did not meet the reasonable expectations of an individual for a given transaction would not allow a precedent for change in all cases. If, however, provisions were "developed" through case precedent, there is no assurance that such provisions serve the total welfare of consumers.

A fifth difficulty relates to the initial assumption. That is, warranty law can provide a remedy in place of a written warranty. While lawyers disagree on this point, it does not appear that written warranties are completely without legal meaning. Thus, to the extent the written warranties are operable and do identify liabilities (as previously concluded), enforcement beyond the written terms is questionable.

Changes in Provisions

The final alternative is to treat the provisions directly. For the reasons previously discussed, the conclusion is that government should focus its efforts directly on the provisions. However, this approach is not without its own special problems. Perhaps the most prominent problems are: first, that a direct statement of provisions would not be a warranty; and, second, that no framework presently exists for determining an adequate set of provisions.

Because a warranty is conceptually a legally sanctioned agreement developed between buyer and seller, direct intervention by government would not technically be a part of such an agreement. For government to actually specify provisions would represent a significant departure from a role of regulation only. Moreover, government action in the above manner presumes a decision making capacity that displaces the individual consumer. For example, theoretically, at present, an individual consumer can form an agreement with an individual seller about liabilities. Essentially, because no actual losses have yet occurred, this process is one of risk distribution. Thus, an individual may decide that he would prefer to assume all risks for a lower price. For government to state the provisions (or terms of risk distribution) is effectively replacing the individual's right to assume such risks if he so desires. And, because all costs are ultimately born by consumers, higher prices result than in the absence of firms assuming risks.

But a continual change in market processes has changed the validity of the theoretical approach. As noted before, firms no longer bargain individually with consumers, but rather, bargains are made collectively. At the core of the problem of firms' liabilities is the fact that warranty law is <u>not</u> designed to deal with inequalities in bargaining positions. Thus, the conclusions to this point suggest that governments deal with this inequality by directly

treating provisions. Provisions themselves define the firms' legal responsibilities. However, implicit in the above approach is the idea that government's role need not be one of directly drafting written statutes. Instead, cooperative efforts with industry groups, suggested procedures, or Trade Commission rulings represent options.

The second problem in treating provisions directly rests with the fact that no framework presently exists. It is therefore the purpose of the remaining chapters to develop such a framework.

In summary, firms' present warranty decisions are based to a large extent on the operation of market processes. Warranty law has left firms liabilities to consumers rather vague and far reaching. In response, manufacturers have drafted written provisions which more clearly identify their liabilities and in many cases limit such liabilities. The question of public policy therefore relates to the adequacy of the provisions themselves and enforcement. But enforcement by legal means is only one alternative. There is also the possibility that provisions can be structured so that legal enforcement is easier, and, in addition, that enforcement by other means is present.

The chapters which follow focus on what are presently identified as warranty provisions. If such provisions are identified by government, the term warranty is more than likely not applicable. However, the focus of these chapters is in the interrelationships between

provisions (a statement of firms' legal responsibilities) and the design, administration, and control of systems to satisfy these provisions. Thus, market processes, provisions, and their effect on consumers identifies the public policy framework.

CHAPTER IV

MARKETING THEORY AND PRODUCT DEFECTS

Introduction

The purpose of this chapter is to provide a summary of present marketing thought that relates to warranties. Relevant treatments of warranties in the marketing literature are scarce. The following material draws on three major marketing areas which impinge upon warranty decisions; the marketing management concept, marketing ethics, and a systems perspective of channel structure and behavior.

Managerial Marketing

Managerial marketing, founded in traditional economics, has grown as a discipline largely on the recognition that a firm's survival depends on a great many more factors than simply price and quantity of output. The marketing management concept, combined with virtually every model of individual consumer purchase decisions, involves the following elements shown in Figure 2.

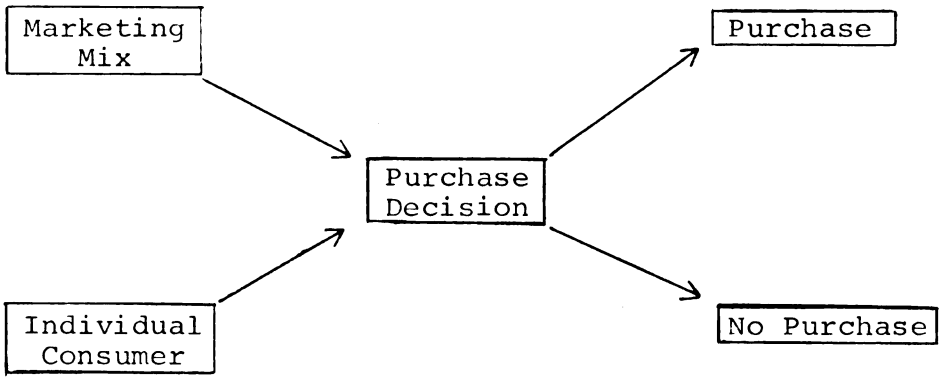

Figure 2.--A Basic Model of Purchase Decisions.

The above is a brief and admittedly simplistic view of what actually occurs. However, this form makes it possible to identify the problem of protecting consumers from product losses.[1]

In Figure 2, an individual's purchase decision is a function of two elements; the marketing mix and the individual consumer. The marketing mix includes all controllable forces that a firm brings to bear on his decision. Such forces include product, communication, and distribution variables. The individual's decisions are further influenced by behavioral forces. The forces are related to physiological, demographic, life style, psychological, and sociological variables. However, for all the factors involved, the critical result for the firm is a purchase.

The concept of market segmentation deals with the aggregation of purchase decisions as shown in Figure 3.

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[1]Product losses were identified in Chapter I as the loss which is measurable by the direct costs of replacing or repairing the physical product.

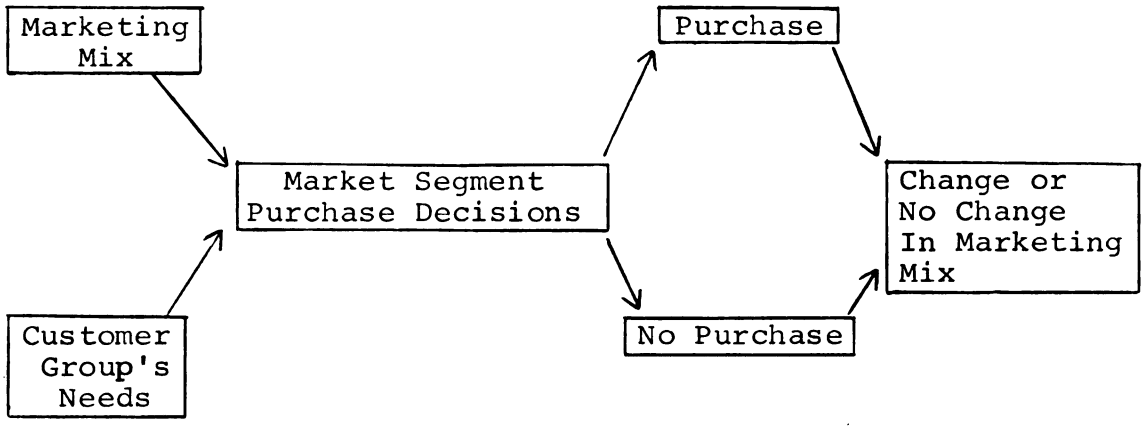

Figure 3.--Purchase Decisions and Market Segmentation.

Market segmentation recognizes three factors. First, a firm's survival rarely depends on the purchase decisions of an individual consumer, but rather, a group. Second, the same product, advertisement, or in general marketing mix, will not produce purchase decisions from all individuals. Third, strategy planning may produce better results when a different marketing mix (or product offer) is developed for different groups of consumers. Thus, a given marketing mix is developed for a particular consumer group or market segment.

On the basis of purchases, revenues, and costs a decision is reached to change or maintain operating strategy. The logic of the process is clear. Those firms that combine inputs most effectively to satisfy a consumer group are judged by purchase decisions. If the percentage of purchase decisions is acceptable relative to required costs, the firm does not change its marketing mix. If, however, the

combined inputs are not acceptable to consumers, the firm faces a larger percentage of non-purchases and must change. Through time and successive reiterations of the process, the firm will survive or fail. Hence, the market "weeds out" those firms that ultimately do not satisfy consumers.

But the concept fails in relation to treatments of product losses. While all products eventually wear out or fail to meet consumers' needs, some purchases result in product losses.

Product loss itself occurs in a time context following a purchase. As Figure 4 demonstrates, a purchase results in consumer satisfaction, or a product loss. That is, at some time following a purchase, the individual consumer is ultimately satisfied with his purchase. Or, due to a physical product condition, the purchase fails to meet with the consumer's expectation.

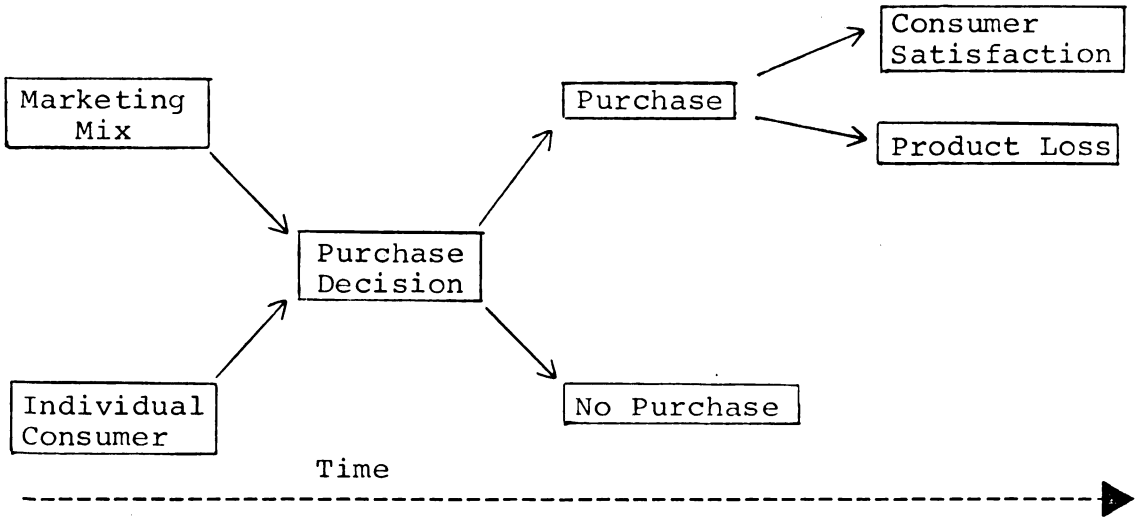

Figure 4.--Purchase Decisions and Product Losses.

Treatments of product losses in the form of Figure 4 are critical to the consumer and should be of vital concern to managers. However, few authors on marketing treat post-purchase activities. Staudt and Taylor are two of the few who have given recognition to unsatisfactory products directly. In their writings, responsibility for treating product loss has been identified as one of the functions of managerial marketing itself.

> A common viewpoint exists that, after custody of goods has been transferred, the marketing process has terminated. Managerially speaking, this is not a sound viewpoint . . . . Marketing responsibility does not stop with the ringing of the cash register at the retail level, at the point of ultimate sale, or even with the actual delivery of goods. Management has a vital stake in seeing that goods give satisfactory performance in use. Unsatisfied customers can quickly destroy all that management has attempted to achieve in preceding marketing and production efforts. Carrying out guarantees and warranties on products and maintaining repair parts and service facilities are obvious aspects of the post-transaction function.[2]

But, on examining the marketing literature, one is hard put to find a definitive statement of firms' responsibilities for product defects. Moreover, no literature exists that provides meaningful decision criteria for warranty provisions.

The result of the marketing concept described earlier is that, among managerial marketing authors, product defects are poorly identified. Generally, a defect is conceived as an unsatisfactory product to consumers.

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[2]Thomas A. Staudt and Donald A. Taylor, A Managerial Introduction to Marketing (2nd ed.; Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970), p. 37.

And, an unsatisfactory product is treated as one which consumers do not purchase. The entire argument of reiterative processes in adjusting marketing mixes reveals a basic concept of an unsatisfactory product as identical to a non-purchase decision. Hence, managerially speaking, the decision process focuses on readjustments of present products, communications, or distribution methods to insure purchases in the future.

Certainly some marketing research data to determine why products have proved defective exist. However, such data are collected with the primary purpose of readjusting succeeding product offers. Treating problems of consumers who presently own defective products is largely ignored.

While research directed toward product defects is still in its infancy, it appears that no framework for treating defects presently exists and in some cases such research is misdirected.

Fisk provides a generally vague and undefined set of warranty "guidelines" for managers.[3] While recognizing a relationship between warranties and consumer education, product improvements, service, and customer relations, he suggests very little except that managers should make "adequate" efforts in these areas. No mention is made of the form of provisions or how they might be evaluated.

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[3]George Fisk, "Guidelines for Warranty Service After Sale," Journal of Marketing, Vol. 34 (Jan., 1970), pp. 63-67.

Udell and Anderson[4] note that warranties have a promotional impact. Their primary conclusion is that warranties be evaluated by a marginal analysis. Thus, expected additions to revenues and costs form the relevant decision parameters.

While no one can seriously disagree with such a general principle in operating a firm, the marginal cost approach by itself is relatively meaningless in reference to warranty programs. In the first place, such an approach would suggest that firms' responsibilities do not extend beyond a sheer profit motive. Certainly many laws and Federal Trade Commission rulings restrict profit making activities on other grounds. Hence, a manager may conclude that no warranty is profitable, but such a conclusion has questionable relevance to public policy. Second, while extensions of warranty coverage may be profitable, in the marginal approach, no recognition is given to the necessity of firms actually performing in accordance with such coverage. Moreover, there is no recognition that extended warranties may not be in the public interest. And third, simply mentioning costs and revenues without reference to whose costs and whose revenues is relatively naive. Because warranty systems operate at many levels of distribution, a recognition of costs and revenues of dealers, wholesalers,

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[4]Jon G. Udell and Evan E. Anderson, "The Product Warranty as an Element of Competitive Strategy," Journal of Marketing, Vol. 32 (October, 1968), pp. 1-8.

and manufacturers is vital to the total operation of these systems.

A final treatment of post-transaction phenomena deals with Festinger's concept of cognitive dissonance.[5] Under this concept the consumer is viewed as experiencing doubt or dissatisfaction about a previous purchase decision. Hence, the concern of managers has led to examination of various means by which this dissatisfaction can be counteracted.

But typical research inquiries to counteract dissatisfaction have taken unfortunate forms if applied to product defects. Rather than treat the product, efforts have focused on the consumer. Hence, the focus is not to rectify product defects, but instead, to rectify consumers.[6] Of the many approaches, most attempt to provide means by which the consumer can be maneuvered into believing that the product is indeed satisfactory. As applied to product defects, the above line of inquiry is very disappointing and highly unethical if firms seek to or can actually achieve such ends.

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[5]For an excellent review of cognitive dissonance and its potential accuracy, see Sadaomi Oshikawa, "Can Cognitive Dissonance Theory Explain Consumer Behavior?" Journal of Marketing, Vol. 33 (October, 1969), pp. 44-49.

[6]In all fairness to this type of research, much of it is directed toward concepts of image which do exist in consumers rather than products. In such cases it may be that no physical product defect exists, but consumer dissatisfaction is still a problem to the firm.

Marketing Ethics

A second area of marketing thought relevant to warranties is that of marketing ethics. It is in the post-transaction period that many issues of ethics arise. But, as Lazer has written:

> Although business ethics has been the subject of concern of many writers, the result so far is little clarity and direction for managers about ethical business action.[7]

However, while little precision exists, it is useful to explore this area further. Lazer continues:

> While many authors tend to personalize business, we should note that business and marketing per se have no ethics--people do.[8]

Other authors have expanded on this. Bartels writes:

> It is assumed that ethics is a standard for judging the rightness not of an action per se, but of actions of one person relative to another. Ethics is a basis for judgement in personal interaction. It pertains to the fulfillment or violation of expectations. Simply to make . . . a shoddy product--that may be bad management, but it is not necessarily unethical . . . . However, if a customer expects to receive truthful information and a product of specified quality, and if he does not, and if his expectation is a general expectation sanctioned by society, failure of the other party to fulfill these expectations is an unethical act. Furthermore, if a particular customer expects little or does not know what he is entitled to expect, and if society makes this determination for him, such a failure is also unethical. Ethics is a concern for people, not just for acts or theory.[9]

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[7]William Lazer, Marketing Management, A Systems Perspective (New York: John Wiley and Sons, Inc., 1971), p. 559.

[8]Ibid.

[9]Robert Bartels, "A Model for Ethics in Marketing," Journal of Marketing, Vol. 31 (1967), p. 21.

But the concern here is not simply ethical responsibility but also legal responsibilities. In this context, it is important to note the parallel between the above discussion and the material of the previous two chapters.

A violation of ethics as well as a defective product is related to an individual's expectations. Moreover, it should be clear that the present framework of warranty law has adopted this approach since the law attempts to judge the individual's expectations arising from the bargaining process. Warranty law at present represents a legalization of ethical principles.[10]

However, specifying and enacting ethics in business decisions has many of the identical problems of warranty law.

> . . . the present legal framework which is constantly evolving furnishes the means and guidance for every high ethical standard of business. For the legal framework includes: the law, the rules and regulations, implementing them through administration agencies and court decisions.
>
> A major ethical problem for marketing executives is the lack of objective standards by which to judge actions. Moral and ethical principles and generalizations are fine as abstract guides and rules, but executives encounter difficulties trying to apply them to specific situations, to the challenges of handling concrete problems.[11]

The major problem of business ethics is therefore identical to the problem of warranty law. Both focus on

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[10]Interestingly, in this context, the law tends to personalize business firms in that the firm represents the other individual to the bargaining process.

[11]Lazer, op. cit., p. 562.

the individual, but neither are workable in the context of a business operation.

That business managers should strive to fulfill the expectations of each individual who purchases a product is sound and indisputable ethical principle.[12] The extent of managers' ethical responsibility is therefore measurable by the expectations of each individual consumer. However, to adopt this approach into law does not allow generalization beyond the individual. Nor does it supply business managers with any guidelines.

More specifically, neither warranty law nor present statements of ethics give any normative form of warranty provisions. However, if managers do exercise decisions about provisions, there is an ethical principle involved. To restate a part of the previous quote of Bartels:

> . . . if a particular customer expects little or does not know what he is entitled to expect, and if society makes this determination for him, such a failure is also unethical.[13]

Hence, if reasonable guidelines for provisions exist, either by theory or governmental suggestion or ruling, adoption of such provisions as part of an express warranty is an ethical decision. However, such a decision need not be based on the actions of one person relative to another, but instead, on an understanding of a firms' operation and

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[12]It might, however, be considered discriminatory under the Robinson-Patman Act and therefore illegal.

[13]Bartels, op. cit.

position in a market economy. Toward that end, the topic of ethics and firms' legal responsibilities play a role in the conclusions in the final chapter of this thesis.

Systems Perspective

The final relevant area of the marketing literature relates to a systems perspective. In particular, the literature which treats channel structure and behavior contributes to an approach in identifying the operation and performance of warranty systems within manufacturer-dealer systems. However, contributions in this area are widely scattered and only tangentially related to warranties. As a result, it is not useful to review the literature at this point. Instead, particular contributions and their relevance to the problem will be presented in the last chapter.

Summary

This chapter has presented marketing thought that relate to warranties. However, none of these provides much direction for managerial or public policy guidelines or for firms' responsibilities in the form of warranty provisions. Attention in the next chapter is directed toward a description of how firms have actually dealt with this problem. The description of warranty systems and their operation supplies the necessary information for the final chapter.

CHAPTER V

WARRANTIES AND MARKETING PRACTICE

Introduction

In the absence of legal or theoretical procedural guidelines, managers have faced the task of writing their own warranty provisions. Yet even the most modest warranties require design, administration, and control of a system to correct product defects. The general purpose of this chapter is to present the basic framework of warranty systems that managers have created. More specifically, it will focus on a description of the principal components of a warranty system, the predominant system objectives, the nature of required controls, various means of control exercised by manufacturers, and the relation between control and warranty provisions.

Principal Components of a Warranty System

A warranty system is a set of institutions which operate to correct physical product defects under the provisions of a written warranty. Principal components are identifiable in two major areas--warranty provisions and a channel network.

Provisions include time/use, compensation, parts covered, conditions, and the location(s) at which defects are corrected. These provisions serve to identify manufacturers' obligations for defects to consumers.

On the basis of provisions, manufacturers have also chosen the second major group of components, a set of institutions, the channel network that must actually make corrections. These provide authorization, interpretation, location, installation, and product repair. Any warranty requires a management decision in each of the above areas. The components appear in Figure 5.

CHANNEL NETWORK	PROVISIONS
Authorization	Time/use
Interpretation	Compensation
Installation	Parts Covered
Location (of institution)	Conditions
Repair	Location (for repairs)
Parts	
Labor	
Facilities	

Figure 5.--Warranty System Components.

Because provisions have been described in earlier chapters, the following description focuses on the channel

network. At a later point, provisions will be treated in greater detail in reference to the system's operation.

A major characteristic of manufacturer-dealer systems is the substantial role that dealers have played in manufacturers' choices of channel network components. In general, dealers, while responsible for product sales, have also been designated by manufacturers as authorized agents for warranty repairs. Specifying a particular dealer in this manner also has the effect of defining a location served by that dealer. Given an authorized set of dealers and their geographic locations automatically determines three additional components: intallation, interpretation, and repairs.

Typically, dealers are most responsible for product installation. For many products this requires that dealers physically transport the product to consumers and make adjustments where necessary. A washing machine, for example, is delivered to a consumer's home, unpacked, leveled, water lines are attached, and it is tested. The counterpart to this activity in the automobile industry is a pre-delivery inspection. Automobiles require an "unpacking" operation, adjustment, and a checklist of items to insure that the car is in proper condition before delivery.

Interpretation is an important component of warranty systems. Basically, this component refers to interpretations of the warranty provisions. While, in the final analysis, factory representatives eventually make

interpretations of the agreement, manufacturers have delegated a large amount of day-to-day decisions to dealers. On rare occasions and with a great deal of effort, a consumer may contact a factory representative about warranty service. In all but extreme cases, however, consumers face dealers regarding warranty adjustments. Thus, for all practical purposes, warranty interpretations are made by dealers.

The final warranty system component is repairs. Manufacturers require dealers to supply parts, labor, and facilities to complete necessary repairs. In short, the total task of repairing the product falls on dealers in the warranty system.

It is through the manipulation and use of the components in Figure 5 that the warranty system operates. Each of these components bears a special relationship to costs, performance, and objectives of the entire system and will be discussed in Chapter VI.

Warranty System Objectives

Perhaps the greatest amount of confusion and dissatisfaction about warranties relates to objectives of warranty systems. The critical matter of objectives is one characteristic that separates a system from a meaningless collection of parts. Without an understanding of objectives, warranty evaluations and systems, end only in confusion and a haphazard approach to warranty problems. The development of a warranty system means there is an

essential purpose to actions and activities of all parties to a warranty.

Without a clear understanding of system objectives; matters of performance, control, and design have little meaning. For example, evaluating system performance requires a measure of present output against desired output. Determining how well systems perform implies a standard for judgement. Similarly, system control implies a desired output toward which performance is directed. Thus, changes in the system must also be considered in light of system objectives.

The distinction between system objectives and operation should be noted because evaluation and criticism of a system proceeds on two different levels. Some criticisms relate to system objectives and others to system performance. Confusing them results in inability to make meaningful recommendations.

For example, if one concludes performance is poor given present objectives, that is one matter. But, if one concludes that performance is good given objectives, yet disagrees with the objectives, that is another matter. Thus, any conclusion or recommendation made without defining objectives leads to confusion.[1]

What are the objectives of a warranty system in the automobile industry? The most logical starting point in

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[1]This is exactly where both governmental and industry studies have left the matter of warranties.

answering this question is to examine the stated objective of the express warranty.[2] The objective of the warranty is to repair or replace defects in production.[3] It is not to correct all product defects.

But what does this objective now involve? It involves two primary considerations--the source of product defects and the need for control over defects in the system.

Sources of Defects

Much of the operation of warranty systems involves the identification of production defects as distinct from all product defects which may exist over time. Failure to understand this basic point can lead to many misconceptions

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[2]It is necessary to point to a distinction in the objectives of the warranty from those of the manufacturer. It is obvious that the warranty system objectives are only a part of the total objectives of the firm within the marketing process. While the relationship of the firm's total objectives to those of the warranty system are important, the major focus of the present chapter is upon the operation and control of the system given the objectives. The examination of what affects and controls the objectives of the warranty system will be presented in the next chapter. That is, the purpose of the warranty system in concept relates to the interaction of the warranty system objectives with those of the entire firm and also the objectives of other parties within the warranty system. However, the treatment here is presented first to understand the warranty system. Only then can the interaction of the warranty system objectives to those of other parties be studied. At this point, the objectives of the warranty system can be relatively straightforward in presentation.

[3]The more common phrase is "defects in materials and workmanship." However, defects in production (or production defects) is used here in order to shorten the phraseology. Moreover, as will be shown later "production" of an automobile extends far beyond the physical limits of the factory.

about the system's operation. Because defects can arise from a number of different sources, it is necessary to provide controls to assure that only defects in production will be repaired or replaced. Warranty systems are not to be confused with service systems which attempt to correct any product defect. Warranties are designed to cover only defects created by the manufacturing process.[4]

For purposes of modeling a warranty system, sources of possible defects can be divided into three major categories related to channel considerations. A product defect can result from manufacturer, dealer, or consumer activities. Each of these sources will be discussed separately. Of major interest is the reason why defects arise and also why defects may be passed along to other channel members.

Manufacturer

The host of reasons for defective automobiles occurring before reaching dealers can be classified into two categories. First, a defect can be "unknown" to the manufacturer when the product leaves the factory. Second, a defect can be known to exist but the car is shipped to the dealer anyway.

Unknown reasons involve design and quality control at the factory. Product designs, which includes the design

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[4]In actual practice this must also include the distribution process and hence the dealer too. In fact, the warranty under the Uniform Commercial Code provides for "defects" in the entire marketing process. However, attention here is focused on the physical product only.

of the production process, can create product defects of which manufacturers are not directly aware at the time of production.[5] In quality control procedures, the term "unknown" defects also applies. However, this does not mean the manufacturer is completely unaware of percentages of defects in a group of products. Instead, it means that the manufacturer is unaware of exactly which products are defective.[6]

Defective products may also be shipped from factories when the manufacturer knows they exist. Reasons for this situation usually involve costs of repair at factory locations as opposed to dealer repairs.

Although wage rates are generally lower at factories, the dynamics of production and distribution processes may make it less costly to repair defects at dealer locations. For example, because of limited space at production sites, it may be profitable to make repairs elsewhere. Second, scheduling of the distribution process may make it

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[5]The matter of product design is only tangentially related to the warranty system. The call-back system that had been instituted provides a more direct means of dealing with any problems that arise in this area. Because elements of a defect in design involve matters that relate to the determination of defects in a different sense, the relevant matter for the warranty system is only that there are some defects that are in the product that are not caught by quality control because the inherent configuration of the product is at issue.

[6]An additional source may be damage in transport. For example, when moving the automobile by train many defects can arise. Some of today's transients ride inside the comfort of a new automobile rather than a boxcar. Also, vandals throw stones at the cars while on the carriers.

very costly for transports to be held awaiting shipments. Third, because product availability at dealer sites has an effect on sales, and because dealers may be anxious for deliveries, products may be shipped even though they are defective. Decisions reached at this point depend on inventory levels, market dynamics, and the costs for any given state of the entire production and distribution system. For any or all of the above reasons, a defective product may reach the dealer.

Dealers

The second source of defects in warranty systems occurs at dealerships. Dealer created defects involve three matters. First, products may be damaged at dealerships due to mishandling. Second, and perhaps less obvious. dealers are to a limited extent involved in production. In many cases dealers install additional equipment such as radios, mirrors, and the like.[7] But, most important for warranty systems, the dealer must check products and repair defects before delivery to consumers. Thus, the dealer represents the final stop before a defective product reaches the consumer.

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[7]This delay in the production process until at the dealer level has been identified by Alderson as the principle of postponement. For example, from the appliance industry, many adjustments are made in the physical product at the dealer level. The colors on some appliances are changed by interchangeable panels on the appliance. Doors on refrigerators are put on the left or right side at the dealer level.

Consumers

The third and largest source of automobile defects is associated with consumers. Some obvious and readily identifiable defects are the result of accidents. But, because consumers use products under many conditions and circumstances, a product's functioning and the amount of defects over time are primarily dependent on the skill, care, and maintenance which a product receives. Because of wide differences in kind and amount of consumer uses, automobiles represent one of the most difficult products for warranty system operation.

"Consumer created defects" account for much of warranty system design and provisions of warranty agreements. This source of defects is critical to system administration and control. Consumer created defects are in addition to those defects that may be due to either dealers or manufacturers.

Need for Control

System control, from a manufacturer's viewpoint, involves two added objectives to that of correcting production defects. First, the manufacturer must attempt to insure that all repairs are completed with maximum efficiency. Second,[8] the manufacturer must attempt to stop all repairs

[8]Various readers may find this objective redundant in that a previously stated objective was to repair only defects in production. However, for explanatory purposes and its critical importance to warranty problems, stopping "unnecessary" repairs rises, in this dissertation, to the level of a system objective.

that are not due to production defects.[9] As long as manufacturers bear part or all of the costs of repairs, their concerns are satisfactory repair completion, the best achievable efficiency, and no payments for "unnecessary" repairs.

Manufacturers' Controls

It follows from the previous discussion that manufacturers' controls pursue three objectives in warranty systems: (1) to insure that dealers repair production defects; (2) to insure that repairs are made as efficiently as possible; (3) to insure that defects not due to production are not repaired as part of the warranty system. Manufacturers' controls, moreover, are exercised relative to two distinct groups--dealers and consumers.

Manufacturers' Control Over Dealers

Manufacturers' control over dealers is a tremendously complex issue. Adding to the problems and objectives of

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[9]There is an implicit thesis conclusion in this objective. That is, that warranties for consumers' benefit, should only be written to deal with production defects. An alternate statement of the above objective would be to stop repairs on all defects that do not fall under the provisions of the warranty. This results from the fact that so-called "extended" warranties take on a service aspect and cover much more than production defects. While the objectives of many manufacturers may indeed be to correct all defects under warranty provisions, and while these objectives are therefore legally sanctioned, and while the effect on many warranties is to repair other than production defects; to state the objective relative to the warranty (which is the topic of analysis) overly confuses the entire matter. The discussion in later chapters depends in a major way on this point.

warranty systems is the fact that dealers also perform sales functions for manufacturers. Thus, any form of control utilized by manufacturers may also have an effect on the objectives of the entire product marketing system.

While any given control is rarely exercised exclusively, the following discussion will treat manufacturers' controls separately in five different forms--the franchise agreement, termination, economic incentives, reinbursement for warranty services, and warranty provisions.

Franchise Agreement

To insure that repairs are performed, manufacturers have written such obligations into dealers' franchise contracts. In addition to the requirements that certain parts inventories be carried, suitable type and size facilities exist, and personnel be available; the entire question of warranty repairs is a contractual obligation between manufacturer and dealer. The following statement typifies the relationship:

> When I say the dealer agrees to perform warranty adjustments, it should be understood that the dealer is in no sense "selling" warranty services to General Motors in the same manner in which he sells repair services to his customers. As one of the considerations on his part for obtaining his franchise, the dealer has agreed to perform warranty repairs for General Motors and to be reimbursed by General Motors upon an agreed basis. In other words, it is a matter of contract with the dealer.[10]

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[10]Statement of Howard E. Crawford, Vice President, General Motors Corporation, before the Federal Trade Commission, February 7, 1969, p. 15.

Hence, technically and legally the dealer is in violation of the franchise contract if his part of warranty system objectives are not fulfilled by him. Realistically, however, manufacturers do not pursue the question of a given warranty repair in court. The question then turns to other means of control available to manufacturers.

Termination

The ultimate and perhaps most powerful manufacturer's control is franchise termination. However, such an action is rarely if ever taken with respect to warranty performance. The reason is that termination defeats the objectives of both the warranty system and that part of the manufacturer-dealer-system responsible for sales.

From the manufacturer's view, the primary objective of the manufacturer dealer system is to sell and distribute new cars. Ridgeway said of termination:

> . . . the costs to the company may be great, for they involve the time and expense of cancellation, finding and training a new dealer and his employees, perhaps a temporary loss of market position in that trading area, and the loss of local customer goodwill attached to the retiring dealer. Furthermore, there is not always assurance that the new car dealer will in the long run perform better than the retiring dealer.[11]

The above reasoning applies to warranty performance with several important additions. First, although the manufacturer may find fault with warranty performance,

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[11]Valentine F. Ridgeway, "Administration of Manufacturer-Dealer Systems," Distribution Channels: Behavioral Dimensions, ed. by Louis B. Stern (Houghton, Miflin, 1969), pp. 125-126.

terminating a dealer who may have superior sales performance is neither an "easy" decision nor a preferred alternative. Second, it would be difficult to justify termination unless there were many instances of improper warranty performance. Third, dealer termination based on legal proof of poor warranty performance might lend undue credibility to legal actions of the dealers' customers against the manufacturer. Thus, the manufacturer might thereby "invite" warranty actions from consumers with very uncertain results. Moreover, such actions need not be limited to the terminated dealer but might occur throughout the entire system. Termination therefore remains a "last resort" alternative.

Economic Incentive

The primary means available for manufacturers' control of dealers' activities is economic incentives. Incentives for car sales are well established. However, incentive systems for warranty repairs have raised considerable inquiry.

Basically, two forms of incentives for warranty repairs are present. First, manufacturers directly reimburse the dealer for services performed. Second, the manufacturer may rely on potential dealer goodwill created by proper warranty repairs and its relation to repeat sales. Direct reimbursement will be discussed separately in the next section. Concern here is for the second form of incentives.

While dealers are reimbursed for warranty repairs, car manufacturers have argued that other incentives exist. The Vice President of Marketing for Ford Motor Company commented:

> Dealers have sizable financial incentives to render satisfactory warranty services that are perhaps even more important than the direct compensation that they receive from the manufacturer. If the warranty relationship with a customer is properly handled, it helps the dealer to sell customer-paid service work and to make repeat new and used car sales. Dealers are well aware of the commercial value of a satisfied warranty customer. Their attitude is reflected in the Staff Report finding that: "Despite their problems with compensation for warranty work, which is becoming a larger part of their business . . . dealers do not wish to discontinue their warranty repair work . . ."[12]

Also,

> . . . in the business of marketing new cars, it has long been an axiom that a substantial portion of repeat new car sales are generated from among satisfied service customers. All General Motors dealers recognize the importance of their overall success in developing a high percentage of repeat customers.[13]

The manufacturer's basic argument is, therefore, that it is in an individual dealer's own interest to complete repairs, to satisfy customers, and to increase the probability of future return business.

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[12]Statement by Paul F. Lorenz, Vice President Marketing, Ford Motor Company, before the Federal Trade Commission, January 10, 1969, p. 9.

[13]General Motors Response, p. 90.

Reimbursement for Warranty Services

Warranty reimbursements are payments to dealers to defray the costs of services performed. One manufacturer described the objective of reimbursements as follows:

> Ford's present reimbursement rates are designed to permit full cost recovery on warranty work performed in dealerships where service operation is conducted with reasonable efficiency.[14]

While reimbursement procedures vary among manufacturers, most follow a fairly standard form.[15] Reimbursements are roughly equivalent to the following formula.[16]

$$WR = 1.25\ (P) + x\ (2M + 1.5\ F) + e$$

where:

WR = Warranty Reimbursement

P = Dealer's Invoice Cost for Parts

x = Time Allowance from Manufacturer's Flat Rate Schedule

M = Mechanics' Average Base Rate

F = Fringe Allowance Dealers Pay to Mechanics

e = An Error Term for Adjusting Formula Parameters.

From the formula, parts (P) are supplied to the dealer at no charge. In addition, 25 percent extra is paid to cover inventory handling. The mechanics' average base

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[14]Statement by Paul F. Lorenz, op. cit., p. 8.

[15]The illustration described here relies on the discussion in General Motors Response to Federal Trade Commission, pp. 86-89.

[16]The formula here is used for descriptive purposes only. The author is not aware of any real formula in use.

rate (M) is doubled to cover the mechanics' labor and dealership "overhead" to arrive at an hourly warranty rate. In addition, the dealer receives 150 percent of fringe allowances paid to mechanics. This figure (2M + 1.5 F) is multiplied times a selected pre-set figure (x) which is designed to allow a reasonable period of time for completing the specific repair. The rate (x) is expressed in tenths of hours and is supplied by a flat rate manual from the manufacturer. General Motors summarized their procedure:

> Flat-rate time allowances are determined by performing each operation a sufficient number of times to arrive at a fair and equitable average of the time requirement. These times studies are made with mechanics of average capabilities working under conditions simulating those present in an average dealership; i.e., they use conventional hand tools, recommended special tools and follow standard disassembly and assembly procedures. In these time studies they do not make use of or employ special equipment unless such items are readily available in all dealerships. Special equipment such as power tools, are not used although they are available in most modern service departments. Where a dealer has such equipment, the dealer enjoys a benefit from the time allowance. The determined amount of time to perform a service operation is increased by 16% to provide for nonproductive time, such as normal diagnosis, obtaining parts from the parts department, procuring tools and for personal relief time.[17]

Some slight modifications are made to the above formula. At some dealerships, the hourly warranty rate (2M + 1.5 F) may be greater than the dealer customer service rate.[18] In such cases, the manufacturer uses the

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[17]The General Motors Response, p. 87.

[18]The rate the dealer charges his regular service customers.

lesser of the two rates. In addition, manufacturers commonly credit the dealers account each month "with an amount equal the average monthly warranty reimbursement as determined from the dealers previous 12 months' warranty claims."[19] This is to avoid large reductions in the dealer's working capital while claims are being processed. Also, the payment to dealer overhead is, in some cases, increased by as much as an additional 25 percent.

As noted in Chapter I, warranty reimbursements have received many criticisms. The thesis will treat these matters in the following chapter. It is sufficient here to note that this particular form of manufacturers' controls has an added impact on both manufacturers' and dealers' costs.

Warranty Provisions

An additional means of control over dealers is related to warranty provisions. While statements of provisions do not have any direct effect in "forcing" dealer repair actions, decisions that dealers make are affected by provisions. Basically, dealers must make certain interpretations of the warranty agreement.[20] To the extent that provisions are written with clarity or unconditionally, the manufacturer can remove much of the decision making power from dealers.

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[19]General Motors Response, p. 86.

[20]See Chapter I.

For example, open-ended phrases that do not clearly specify parts covered leave interpretation at a wider dealer discretion than if they were specified. Similar phrases of "normal use and care" make it necessary that the dealer reach a decision. Thus, statements of provisions can increase or decrease the number and extent of decisions that the dealer can or must make.

Manufacturers' Control Over Consumers

Manufacturers' controls over consumers are also exercised through the provisions. Lacking any direct control over consumers activities, control through provisions is passive in nature. Basically, the manufacturer can draft provisions in such a fashion as to void the agreement if terms are violated. Hence, lack of proper care, misuse, or neglect can be conditions for voiding the agreement.

In a much less obvious fashion, other provisions can limit warranty coverage only to those defects which the manufacturer is relatively certain he is at fault. Control through provisions is thus critical to a statement of responsibilities and to the operation of the warranty system. This subject will be treated at greater length in the next chapter.

Summary

This chapter has presented a description of a warranty system. Principal system components as well as

the system's objectives and manufacturers' controls were identified.

With this basic background, attention in the next chapter is directed toward the operation of the system, design alternatives, and administrative changes available to manufacturers.

CHAPTER VI

WARRANTY SYSTEM OPERATION

Introduction

Performance, costs, and objectives are three critical features of warranty system operation. In the previous chapter, the relationship of performance to objectives was noted. Given unlimited expenditures, there are practically no set of objectives or desired levels of performance that cannot be achieved. But, when expenditures or costs are considered, interactions among costs, performance, and objectives become important.

Maintaining constant performance levels relative to changing objectives can only be achieved through changes in costs. Holding objectives constant, performance levels improve or fall with changes in costs. Holding costs constant, full performance can always be guaranteed through adjustments in objectives. Thus, the interactions among the above determine the nature of warranty system operation and its effect on each of the system's parties.

But warranty systems do not operate in a vacuum. They are by definition associated with product sales. The

purpose of this chapter is to examine the relationships of warranty system performance, costs, and objectives to the goals of manufacturers, dealers, and consumers. Because any warranty system is part of a larger product marketing system, warranty system operation can only be assessed realistically in relation to the goals of each of the larger system's members.

Manufacturers' Goals

While manufacturers may have numerous reasons for making changes, it is assumed here that their primary concern is profitability.[1] But rather than treating the issue of profit maximization, it is far simpler to consider potential improvements in profit positions. Such improvements need not be optimal.

In attempting to increase profits, manufacturers' options include the following:

(1) Increase new car prices to dealers only.

(2) Increase dealers' parts sales.

(3) Increase dealers' parts prices.

(4) Increase dealers' new car sales.

The desirability of any option depends on its associated costs and revenue. Each of the above options can be examined in the context of changing a warranty system similar to that described in the previous chapter.

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[1]It may, in addition, be argued that manufacturers must make certain warranty changes as a matter of conformance with the law, regardless of their effect on profits. However, due to the wide latitude the law now provides, no changes need be made for this reason.

Manufacturers' attempts to increase car prices to dealers only are not always successful. Dealers exercise leeway in making their own price decisions because many vehicles are sold well below sticker prices and because trade-in allowances exist. Thus, price increases to dealers may be passed to consumers.

However, price increases to dealers will not be passed to consumers if competitive conditions do not allow such an action. If only one manufacturer increases prices to dealers, and if competitive conditions do not allow increases in consumer prices,[2] the profit positions of his dealers will suffer.

In general, however, the long-run competitive viability of a manufacturer-dealer system rests with maintaining a profitable set of dealers. Hence, increasing prices to dealers is an option likely to be exercised only when the profit position of dealers can withstand such an increase. This is important. Because manufacturers can "share" in dealers' profits through price increases, actions which increase dealers' profits also benefit the manufacturer. Specifically, warranty changes in conjunction with price increases offer the potential of increasing both the manufacturer's and dealers' profits.

Increases in dealers' parts sales is a function of a host of factors including prices for service, dealer

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[2]If competitive conditions already did allow price increases, it is assumed that dealers would already have done so.

dependability, and competitive institutions. Manufacturers have an interest in parts sales since warranty changes may improve dealer profits and manufacturers supply many of the parts. In general, a change in warranties is likely to generate changes in parts sales. This topic will be part of the discussion which treats dealers' goals.

Increases in dealer parts prices supplied by the manufacturer may also increase manufacturers' profits. In similar fashion to an increase in new car prices, manufacturers can increase dealers' parts prices with the effect of "sharing" profits. However, increases in parts prices presents a problem to manufacturers. While the manufacturer is the sole supplier of new cars, dealers buy many car parts from independents rather than from manufacturers. To an increasing extent, manufacturers "forcing" dealers to buy only factory parts is becoming a potential anti-trust violation. Thus, faced with price increases, on parts, dealers may buy parts from sources other than the manufacturer.

In the context of changing warranties, it could be argued that manufacturers might attempt to generate extra parts sales through provisions that require periodic maintenance at dealerships. Where such maintenance is not covered by the warranty, and where parts prices can be increased for such maintenance, the manufacturer can thereby increase profits. This is unlikely, however, because manufacturers' warranties supply many parts (plus

inventory carrying charges) to dealers, and because dealers can selectively purchase parts required for periodic maintenance from other souces. Manufacturers are unlikely, therefore, to profit by the above actions. Thus, increases in dealer parts prices represent the most likely method for improving manufacturers' profits by sharing in dealers' profits.

Increasing new car sales is by far the most desirable option for automobile manufacturers. Unlike many types of franchise arrangements which return a percentage of gross sales to franchisors, automotive manufacturers' profits depend on sales of cars to dealers. Sales of new cars, therefore, benefit both manufacturer and dealers.

It is the potential impact of warranties on new car sales that offers the most likely explanation for warranty changes. But changes in warranties with the purpose of increasing new car sales also demonstrates some of the unique properties of warranties and warranty systems.

Generating increased sales is dependent upon a price decrease to consumers or an increase in consumers' perceived value of the product offer. Other things being equal, changes in warranties to increase sales must be accompanied by a perceived consumer increase in the value of the product offer. Whether or not there is an actual increase in value will be treated later. At this point, it is useful to consider why a manufacturer may choose to change a warranty rather than to alter another variable.

Certainly manufacturers could attempt to increase sales by lowering prices. But, the automobile industry[3] is characterized by an oligopolistic market structure. Price changes in an oligopoly may be quickly matched by price changes from rival competitors. Moreover, such options as increasing advertising expenditures, minor product changes, special offers and the like will also be met by competitive responses. Why, then, would a manufacturer change warranties?

It could be argued that a change in warranties, even if matched by competitors, would increase the total industry demand. But this is not likely. Let us suppose that total industry demand is capable of expansion through warranties. The same situation should hold for changes in other factors which increase the product's value to consumers. Thus, if a given manufacturer's actions are followed by others in the industry, a price decrease, or a product improvement, would produce similar results.

The conclusion of this thesis is that warranty changes can yield competitive advantages, even in the context of an oligopoly. The reason is that the costs of warranty changes are not necessarily the same for each manufacturer or set of dealers in the industry.[4] Thus,

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[3]As are all of the industries which produce products of the general class described in Chapter I.

[4]Another explanation will follow later. Briefly, it can be argued that the ethics of the firms in the industry vary. Hence, with no differences in costs, a given firm can offer a warranty which is deceptive to consumers. The alternative for other firms is then to match this deception.

unlike a price change or advertising campaign, total product offers to consumers cannot be matched by competitors at the same cost.

Among the reasons for differing costs are: First, a product of superior quality or durability allows the manufacturer the advantage of offering a "better" warranty. Second, a given product may be less costly to repair because of design and product planning. Third, a manufacturer's particular group of purchasers may actually take better care of the product. Fourth, variations in quality control at the factory may affect the costs. Fifth, a more efficient set of dealers may have an impact on the costs of warranty services. Sixth, better distribution of parts, handling of parts inventories, or economies of scale in parts manufacturing might lower costs.

Numerous factors in the entire production and marketing operation may also interact to yield a different set of costs between two automobile manufacturers. The conclusion of this thesis, however, is that one major factor explains most of the cost differences. The operation of the warranty system in conjunction with the manufacturer dealer system may, at a given point in time, substantially reduce the marginal cost of offering an extended warranty with no offsetting effect on warranty system performance.

For example, assume that a given manufacturer's sales, market share, and profits have been slowly declining over the past few years. The effects of such a decline

include a loss in dealerships, smaller dealer profits, and over-capacity of the entire dealership organization. Over-capacity may be the result of a number of factors such as the relations at dealerships between new car sales and used car trade-ins, service sales, and parts sales.[5]

While the manufacturer could launch a new and more intensive advertising campaign, or cut prices to increase sales, an extension in warranties seems to offer several advantages. Dealers may view it as a good selling point. Consumers may perceive some increase in product value. But its most important effects are on the cost structures of both the manufacturer and dealers.

First, the effects of a warranty on manufacturers' and dealers' costs and revenues are unlike the direct effects of a price cut or an increase in advertising. For example, advertising increases typically require expenditures first and a "lag period" before results are realized. But under a warranty, the impact on revenues and costs occurs in reverse order. Thus, one can promise anything, but unless sales are made and warranty service performed, the promise is costless. In addition, it may be that increased revenues from the sales impact of the warranty will help pay for service to be performed later.

Second, unfortunately for consumers, much of warranty service may not be performed at all. Hence, costs of granting the warranty may not be realized.

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[5]The next section on dealers' goals will explore this situation in greater detail.

Third, from the manufacturers' viewpoint, some of the warranty costs may be passed to dealers. However, caution should be exercised in interpreting this conclusion.

One of the controls available to manufacturers is the level of warranty reimbursement. By paying dealers for repair costs only, the manufacturer can discourage false claims from dealers. But a large amount of debate has centered on whether or not warranty payments cover all costs and whether or not "all costs" include a profit. The conclusion of this thesis is that such debates are largely irrelevant.

An examination of the payment formula presented in the previous chapter reveals that warranty payments to dealers are made at a constant rate.[6] Moreover, a closer study of the formulas suggests that payments for all variable costs are made in addition to payments to fixed factors. Thus, a general conclusion that warranty reimbursements are unprofitable or profitable to dealers is meaningless unless one considers a dealer's operating capacity. Moreover, such discussions are even more irrelevant if, in fact, a warranty is being used as a cost incurred for the purpose of generating revenue.[7]

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[6] In economists' terms, this would imply that the marginal revenue curve to dealers for warranty repairs is a straight horizontal line.

[7] The reader should also consider the argument that there may be no reason at all for reimbursing dealers for warranty repairs. It can be argued that dealers should "take out" enough money from product sales revenues to cover these costs. This point is not entirely valid but it will be considered later.

Therefore, warranty reimbursements which cover dealers' variable costs and contribute to fixed costs may even be profitable to dealers depending on the operating capacity of the given dealership. To illustrate the following arguments, it will be assumed that the present reimbursement formulas pay the full cost of repairs for a dealership operating at full capacity and reasonable efficiency.[8] Given this assumption, several additional conclusions follow.

Dealers may find the warranty change to their short-run advantage. Faced with over capacity, any reimbursement which pays variable costs and contributes to fixed costs is a desirable alternative to no revenue. Hence, the manufacturer in these circumstances does not encounter the same amount of difficulty in assuring dealer performance as at other time periods. However, suppose dealerships later face capacity operations. Then payments at full costs may not be desirable alternatives to profitable service. At capacity, warranty service which does not include a profit must displace profitable service alternatives.

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[8]Full cost used here implies a zero net contribution to profit. This assumption is similar to manufacturers' statements. See the previous chapter. However, it should be noted that if warranty reimbursements do not cover full costs, the marginal revenue-cost argument for granting warranties is, from the manufacturers' viewpoint, difficult to say the least. Unless the manufacturer's decision includes the "phantom" cost accorded to controlling false claims, costs are passed to dealers and excluded from consideration. In such a case, the manufacturer's costs of granting the warranty is less than the total cost of granting the warranty (dealers' costs included). Such an analysis may therefore make a manufacturer's unprofitable decision in total a profitable one.

It is, therefore, the relationship between dealership capacities and warranty reimbursements, that most significantly affects warranty system performance. Assuming that dealers' actions are profit motivated, warranty performance of dealerships operating at or near full capacity is impaired with additional warranty service.[9] It is for this reason that a difficult choice faces a manufacturer's competitors. If his competitors do not match his warranty, they may lose sales and market share. If they do match the warranty, and if their dealerships are operating at capacity; they must do so at the risk of poor warranty performance or increased costs. To match the offer at the same costs results in poorer performance. To hold performance constant relative to increased warranty service requires added inducements to dealers and/or added controls. Either of which add to costs.

It should also be mentioned that a different philosophy of management may be present. For if a manufacturer feels that without some drastic action he will go out of business, the promise of a generous warranty costs him very little. Should he not succeed in generating revenue, he will go out of business in any event. Should he succeed, he can face warranty problems when they confront him. The

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[9]This conclusion is particularly true if one only considers the warranty. It could be, however, that dealer performance is not affected if the dealer recognizes (and accepts) the argument that the warranty has a vital effect on his sales. However, for reasons to be explained later, this argument does not hold.

presence of such a possibility, however, threatens the operation of the entire market system.

Dealers' Goals

The individual goals of dealers have added effects to warranty system operation. A typical dealership is much more than an institution to sell new cars. Dealerships are multiproduct firms.

Revenue for a dealership may be created by new car sales, used cars, parts sales at both wholesale and retail levels, service sales, and warranty reimbursements. If one assumes that dealers are profit motivated, at least two reasons may be advanced to explain dealers' actions relative to warranties.

First, it could be argued that dealers focus their efforts only on the most profitable product alternatives. Hence, for example, if profit potential is higher in used cars than in new cars, dealers will "shift" their product mix to concentrate on used cars. This particular activity causes continuing problems for manufacturers.

Because dealers potentially exercise considerable independent control in profit making activities, individual dealers may become largely used car and/or service centers. Such a thrust does not contribute to manufacturers' profits. Hence, manufacturers' face a problem of continually focusing dealer activities on new car sales and parts sales. They are profit making activities beneficial to both manufacturer and dealer alike.

If warranties are viewed by dealers as a separate revenue source, then there are implications for warranty service. Operating at capacity, added warranty repairs must be made in place of other alternatives. If (as assumed) the net contribution margin for warranty repairs is zero when other service alternatives have positive margins, or if the relative profits are less from warranty repairs, then dealers would naturally shun warranty work.[10]

Yet a second reason which is offered to explain dealers' actions counters the above conclusion. Marketers have never seriously argued that each individual product in a multiproduct firm must be profitable. Product line management recognizes the interactive complementary effects among the profitability of an entire group of products or product line. Thus, while product A may not be entirely profitable, its presence may contribute to the profits of product B. Before removing an unprofitable product, therefore, management must determine this impact. A similar

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[10]Actually, the assumption of zero net contribution margins is not totally necessary. Even if warranty service is profitable (has a positive net contribution margin), other alternatives may still be preferable. But, in this case sales volume must be considered. Thus, the net contribution margin of both warranty service and other service alternatives along with their respective volumes is at issue. However, the assumption made is not restrictive if warranty reimbursement margins are much smaller than alternatives. In such a case, warranty service volume would have to increase substantially before dealers find it attractive. Such an event from the available evidence, is highly unlikely. However, it should be mentioned, that dealers may have negative net contribution margins for other service. If this is the case, warranty work is preferable to other service. This will be discussed later.

argument would appear to hold for warranties. Warranties may affect total dealer profits as a result of their effect on sales.

Which of the above reasons better explains dealers' actions? It seems likely that the first argument is generally more valid. The evidence, however, is ambiguous and open to challenge.

It is highly likely that dealers utilize a mixed strategy. That is, under a "satisficing" principle, net contribution margins are not hard and fast decision parameters.[11] Dealers more than likely develop an impression of a "reasonable" or an "adequate" return for warranty service. There are several reasons for reaching the above conclusion.

Dealers do not keep records that would allow them to compare net contribution margins. Accounting formats, supplied and required by manufacturers, do not isolate costs on the basis of revenue centers. A typical dealer more than likely has little idea of what net contribution margins actually are. Even more significant is the fact that a dealer's impression of the profitability of individual warranty services does have an impact. Regardless of the facts (which are not known), some dealers seem to believe that warranty service is not to their own advantage.

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[11]Warranty service may even be profitable--just not as profitable as other alternatives.

The above impression may arise from the fact that customer service rates are, in some cases, higher than warranty reimbursement rates and sales volumes on each are roughly equal.[12] However, even where this is the case, no direct conclusions should be drawn for the following reasons.

First, warranty service may not contribute to costs as much as customer service. Advertising, financing, and repair costs differ between customer service and warranty service. The differences may also be due to temporary local market structures. Being able to charge higher rates locally may allow a higher stated rate.

Second, the dealer's stated customer rate may be, to a large extent, meaningless for several reasons. A dealer may state a regular customer service rate and actually generate revenue from special "sales" of repair service. Dealers often offer their own warranties on used cars which specify a "reduction" on parts and labor. In many cases, the price of parts and labor may be artificially "adjusted." A given dealer may use the rate figure for his own internal accounting procedures since dealers not only sell service, but also make repairs on used cars in preparation for sale. A large amount of a dealer's service facilities may thus be treated as an expense but not be directly subject to a market determined price.

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[12]Equal sales volumes would thus mean that total profits on customer service are higher assuming costs of both warranty service and customer service are equal.

Explaining dealers' actions on the basis of product line management also presents other interesting considerations. Manufacturers have argued that dealer incentives to perform warranty repairs are related to the potential for repeat sales. Thus, they feel that warranty reimbursement need not be immediately profitable to be desirable. However, there is a basic fallacy in this argument.

Manufacturers' warranties provide that warranty service can be completed at any authorized dealership. The impact of this condition is that a given dealer may be requested to perform repairs on a car that another dealer has sold.[13] Moreover, it may be obvious to the dealer that his own sales in no way depend on the individual goodwill of a particular owner seeking warranty repairs. It is not difficult to find cases where a consumer has "saved" a few dollars on a car purchase many miles from the local dealership. The local dealer may understandably refuse to provide warranty service when the consumer returns.[14] The final chapter will return to this subject.

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[13] In addition, second owner provisions sometimes used cause many privately sold cars to be under warranty.

[14] Added to this problem are dealer complaints of "stimulator" dealerships. Essentially, such complaints allege that manufacturers use some dealers to cut prices and increase the volume of cars in an area while at the same time subsidizing their activities. Other contributing factors are fleet sales and large cut-rate dealers that "flood the market" for warranty repairs at other than the original selling dealership. The extent and existence of these activities is presently unknown and unsubstantiated.

Consumers' Goals

Individual consumers' responses to warranties are also relevant to warranty system operation. Consumers operate under two conflicting interpretations of a warranty. First, the best product needs no warranty. Second, the better the warranty, the better the product.[15] Neither of the above statements need be true.

The statement "the best product needs no warranty" refers to physical characteristics of the individual product purchased. It naturally follows that if nothing "goes wrong" with the product, there is no need for a warranty. However, no amount of pre-purchase research, regardless of how well it is conducted, offers the consumer the assurance that nothing will go wrong. Proponents of intelligent buying, suppliers of information about products, and product experts cannot offer unequivocal guarantees that any given product will be defect free. What can be offered, however, is the assurance that a given manufacturer's products have a lower probability of being defective. But, as will be discussed in the final chapter, the true reason for the warranty's existence is that there always exists a probability of a production defect. If the kind, amount, and costs of defects are known with certainty, the whole problem is reduced to a simple price adjustment.

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[15] It is assumed for purposes of this discussion that a "better" warranty, from the individual consumer's view, is one which provides for longer time periods, more parts covered, and the like.

The second statement, "the better the warranty the better the product," identifies another series of consumer interpretation problems. One concerns the use of the term product.

If "product" refers to physical characteristics, then the statement has no consistent validity. The first part of this chapter has shown that extended warranty coverage can be granted even when competing manufacturers' products are identical. When granting a warranty has an effect on purchases, it may be that the product with the best warranty is inferior in terms of the amount of production defects. Thus, consumers cannot logically associate a better physical product with a better warranty.

If "product" refers to the product offer, the consumer faces other problems. The statement would then read: the better the warranty, the better the product offer. In this sense, it would mean that a better warranty adds more value to the entire purchase. However, a better warranty may not add more value to the product offer for several reasons.

First, the consumer has no absolute assurances that warranty service will be performed. Hence, his decision must also include a probabilistic assessment of defect costs and warranty system performance. His decision, however, must also include the likelihood that he will successfully pursue the matter in court if warranty system

performance is unsatisfactory. In addition, he must also assess the possible court costs involved.

Second, for a warranty to add value to the product offer, the probability of defects and repair costs from competing product offers must be considered. Thus, the consumer must be able to compare a better warranty on a possible poorer product with a poorer warranty on a possible better product. Such a decision, in addition to the previous factors discussed, would include such factors as the consumer's alternatives for repair, their costs, the utility for risk, and an assessment of repair costs at the time of a defect.

Since consumers are not able to gather and assimilate all of the relevant probabilities and expected cost data it seems clear that consumers have no objective criteria for evaluating warranties. Yet despite this, warranties have an impact on purchase decisions. Why should this occur? At least three explanations can be offered.

First, consumers may reason that, all other things being equal, an extended warranty is preferred to a shorter one.[16] Second, consumers may believe that a better warranty can only be offered if the product is of superior quality. Third, consumers choosing a longer warranty may place their trust in a given dealer, manufacturer, or the aura of law that surrounds a legal document.

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[16]All other things being equal in this case would also have to include an equal likelihood of service under both warranties. An extended warranty not honored is worse than a short one fulfilled.

The first explanation may be legitimate from the individual's viewpoint. Longer warranty coverage is desirable for an individual. However, the following chapter finds reason for rejecting it from the viewpoint of all consumers.

As previously discussed, the second explanation cannot be logically supported given a fuller understanding of warranty system operations. That consumers may associate product quality with warranty coverage most likely results from a lack of understanding business processes. In this context, warranties may be potentially deceptive to consumers.

The third explanation has some validity because all economic systems depend on a significant degree of trust. If consumers can trust neither dealers, nor manufacturers, nor the legal system, then the entire allocation process is jeopardized. Thus, maintaining and improving consumers' trust defines the task of both the legal and the market system.

CHAPTER VII

TOWARD IMPROVING WARRANTIES

Introduction

What should be done about warranties? This question has received a great amount of attention from public policy makers. The first chapter noted that the question is misleading. It is useful at this juncture to consider again what a warranty is.

A warranty can be defined as a legally sanctioned agreement which distributes risks. There are several important parts to this definition. First, as Chapter II has shown, a warranty is viewed legally as an agreement between the parties. Second, the agreement is legally sanctioned in that it is potentially enforceable by court action. Third, and most important, a warranty distributes risk. Risk distribution is the critical feature of warranties.

If consumers faced no risks in product purchases, there would be no need for warranties.[1] Warranties exist

[1]Unless in the relatively meaningless case, a warranty is for prearranged repairs. For example, if one could have complete knowledge that his car would need a new fuel pump 472 days after purchase, he could make arrangements for repairs at the time of purchase.

because something, presently unknown to the buyer, has a probability of proving unsatisfactory after purchase.

If the occurrence of any unsatisfactory attribute of the entire product offer were known[2] with certainty, buyers could make allowances before making purchases.[3] Prices paid can always be adjusted. Thus, the function of the warranty is to deal with risks.

But, there are many types of risk.[4] This thesis has treated production defects.[5] Thus, a warranty defines manufacturers' responsibilities to consumers for the risks of production defects.

Therefore, rather than "do something" about warranties per se, a major public policy issue is whether risk distribution presently under warranty law could be improved and how.

Improvements require a change. It will be assumed that public policy seeks change on behalf of the total welfare of consumers.

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[2]Knowledge would have to include both the time, and the costs of the problem.

[3]This is possibly the reason that the Uniform Commercial Code does not allow an implied warranty in those cases where a consumer has had an opportunity to examine the merchandise. (And such an examination ought to have reasonably allowed discovery of a defect.) See Chapter III.

[4]See Chapter I.

[5]See Chapter II.

Changing public policy in warranties[6] can be supported logically on two grounds--(1) to improve performance relative to present statements of manufacturers' responsibilities and (2) to improve statements of responsibilities themselves.

As explained in Chapters III and V, there is little value in improving performance if present statements of responsibilities are inadequate. Therefore, it would be desirable to treat responsibilities first and then treat performance. However, treatments in this order must not be made independently for the following reasons.

Chapter III has demonstrated that provisions actually define manufacturers' responsibilities. Chapter V has shown that warranty system performance is affected by the system's service capacity. But, provisions also affect the system's capacity by the amount of service performed under a warranty. Hence, warranty system performance is related to warranty provisions.[7] The relationship between statements of responsibilities and actual performance requires that both be considered simultaneously.

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[6]The term "warranty" will be used as synonymous with risk distribution procedures for production defects. This shortens the phraseology and provides continuity. However, the reader is reminded that changes in warranties that this chapter presents may result in something that is not legally a warranty. See the previous discussion in Chapter III.

[7]There is the added dimension that some provisions are "easier" to enforce which also affects performance. See Chapter III.

Simultaneous consideration of performance and responsibilities lies at the heart of improvements to warranty problems. Policy recommendations which seek to change responsibilities (provisions) without recognizing their effect on performance are ill considered.[8] Recommendations which focus on "forced" performance alone must consider enforcement costs, the possibility that changes in responsibility statements provide a preferred alternative, and the propriety of present responsibilities.

This chapter incorporates both performance and responsibility considerations, after first treating several characteristics of the warranty problem and their relationship to public policy decisions.

Toward a Solution to the Warranty Problem

The warranty problem that faces policy makers is what to do about the risks of production defects. In generating improvements[9] it is useful to view the problem in two parts--a static solution and a dynamic solution.

A static solution to the warranty problem requires that risks for a given time period be distributed in an "acceptable" fashion. A dynamic solution seeks a reduction in risks through time.

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[8]The same statement remains true for manufacturers' changes in warranties which is why problems exist.

[9]This procedure should suffice to generate an optimal solution also if a point can be reached where no further improvements are possible. However, the claim of an optimal solution would require considerations of all possible alternatives. No such claim is made. This procedure can therefore be compared to an heuristic approach.

A Static Solution

For any amount of products sold in a given time period, say a week, the total amount of future defects[10] for these products can be viewed as finite in number.[11] If one assumes that all defects are actually repaired,[12] then a static solution to the warranty problem is relatively straightforward.

The problem is then one of distributing the costs of future defects among the system's members--the design of a warranty system.

A solution to the static case of the warranty problem is possible under the following conditions:

(1) All consumers are considered risk neutral.

(2) Defects occur to all consumers on a random basis.

(3) The cost of repairing any given defect is equal to all consumers.

(4) The total costs of repairing defects within a warranty system exceeds that of market alternatives.

If the above conditions hold, then no warranty is preferable to all alternatives. The reasons are as follows.

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[10]Costs of "future defects" are the risks in question. "Future defects" applies in the sense that consumers face a defect immediately or at a later date in the time period.

[11]The number of defects depends on some definitional problems that will be discussed in the dynamic case. For the static case it will simply be assumed that the amount can be determined or approximated by statistical techniques.

[12]It is, however, quite possible that minor defects need never be repaired depending on an individual's taste and the repair costs.

The costs of repairing a given amount of defects can be borne totally by consumers, shared with a manufacturer-dealer system, or shifted totally to manufacturers and dealers. However, where manufacturers or dealers bear part or all of the costs in any one time period, these costs are ultimately shifted back to consumers. Thus, warranty costs are reflected in increased administrative and operating expenses of a warranty system and, therefore, in increased product prices. If, in addition, performance under the warranty must be enforced by courts, these costs must also be borne by consumers--either directly or through increased prices.[13]

A critical question is what amount of warranty costs can be passed to consumers through price increases. This depends on the elasticity of demand for the entire industry. Thus, warranty costs (including all repairs, court costs and administrative expenses) are reduced to all consumers by the amount that cannot be recaptured by price increases. The resultant amount, <u>total warranty costs</u>, must then be compared with other market alternatives. The previous condition (number four) was that total warranty costs <u>do</u> exceed market alternatives.

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[13]However, whether the product's consumers or other members of society bear warranty court costs depends on the court arrangement. The question of whether warranty problems (and costs) are a problem of the total society is analogous to the present airline hijacking problem. Airlines claim that the Federal government should bear the costs of finding hijackers rather than the airlines--and hence, their customers only.

It therefore follows, that if the above conditions hold, the expected repair cost for any given consumer's product is less than under a warranty. If, consumers are risk neutral, government should prefer no warranty.

But the previous conditions are not entirely valid. The following discussion explores each condition in further detail and draws conclusions that are important to the remaining material.

Condition I

It is highly questionable that all consumers can be considered risk neutral. In the static case, a warranty system can be compared to an insurance system. Although all consumers ultimately pay for total warranty costs, risks and repair costs can be shifted among consumers. The individual risks of a very costly defect can, therefore, be shared with other consumers. Hence, even though expected costs of repairs rise under a warranty, the increase in cost may be more than offset by the "insurance" value. Thus, from a public policy viewpoint, a warranty is preferable to no warranty.[14]

But warranties are not completely comparable to insurance systems. If they were, it would be expected that warranties, by now, would be made part of regular

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[14]As long as individual consumers' utility functions are not linear with monetary losses. This remains an assumption in the following material. For further explanation see Chapter II of Green and Tull, Research for Marketing Decisions (2nd ed.; Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1970).

consumer insurance policies. This has not been the case[15] because of the dynamics of a warranty system. In short, the total amount of defects (and hence risks) is to an extent controllable by manufacturers. Were these risks to be assumed by an independent insurance company, manufacturers' incentives to reduce risks would be substantially lessened. Thus, in the static case, warranties distribute risks among consumers. But in a dynamic sense, warranties potentially act to reduce risks. This topic will be treated later.

Condition II

It is also highly unlikely that defects occur to all consumers on a random basis for three reaons--the definition of a defect, individual consumer judgement capabilities, and the time of purchase.

If defects are identified relative to customer's or user's expectations,[16] then the distribution of defects in a warranty system is a function of consumers' individual tastes. Under definitions which treat consumers' expectations, the same physical product may prove satisfactory for some persons while unsatisfactory to others. But, definitions based on individuals' expectations are rejected for the following reasons.

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[15]However, it is interesting to note that manufacturers do carry insurance against certain forms of warranty losses.

[16]See Chapter II.

First, these definitions are very costly to enforce and, as a result, to some extent unworkable.[17] Second, if the definition is actually used in practice, the result is to shift repair costs from consumers whose desire for perfection exceeds that of others. For example, it is always possible to find something in violation of expectations with the most nearly perfect product. But to repair products on this basis alone results in increased product prices to other consumers who may find the same product acceptable.

Third, a definition of defect based on violations of expectations does not provide an opportunity to reduce risks in the dynamic case. This occurs because it is only after expectations are violated that a defect can be identified.[18]

A definition based on expectations is therefore rejected in favor of a definition based on physical product properties. Hence, for this thesis, a "defect" is defined as:

> An identifiable physical product condition, caused by the manufacturer (or dealer system) which does not meet the manufacturer's

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[17] Chapter III has shown that this definition exists implicitly in warranty law and the difficulties it now creates.

[18] Unless one assumes that expectations can be identified before purchase and one is also willing to grant government the power to deal with this situation. For reasons mentioned in Chapter II, this does not lead to desirable actions on government's part.

> specifications and/or performance standards implied by a majority of similar items sold by the manufacturer.[19]

The above definition has the following properties. First, a defect is identified by physical product properties. Second, a disinterested third party can identify a defect. Third, it applies to mass produced products. Fourth, it more properly addresses itself to the problem of production errors. Thus, for example, if the majority of a particular manufacturers' products might be considered "shoddy" or defective by some other standard,[20] their general character can be more readily assumed as acceptable to a particular group of consumers. And fifth, the fact that the defect must be caused by the manufacturer requires that a product which simply "wears out" is not considered defective.[21]

Even under the above definition, however, defects do not occur randomly. As previously noted, individual consumer judgement capabilities play a role--both before and after purchase.

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[19]The reader may notice some similarities between this definition and an implied warranty of merchantability. See Chapter III.

[20]For example, as a general rule a $1,000. stereo is probably defective if it sounds like a $40. stereo. However, the same consumer may own both, and neither need be "defective."

[21]This feature of the definition will be treated in greater detail later.

A characteristic of most warranty systems is that, after purchase, the consumer must initially diagnose a defect. Some consumers may not be able to identify a defect while others can. However, this matter is of little consequence unless an unperceived defect (or loss) can be considered a loss.[22] Some individuals may be more capable of choosing a defect free product than others.[23]

Yet another reason defects may not be distributed randomly relates to the transaction itself. Because title and the physical product are not necessarily transferred at the same point in time, some consumers may never see the particular product they purchased. This is important, in the automobile industry,[24] because an examination of

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[22]However, some critics have complained that warranty systems should perform diagnostic tests because of a safety hazard. This problem is partly beyond the scope of the present inquiry in that the consequences stemming from a defect have been assumed to be only product loss. (See Chapter I.) However, since this possibility cannot be completely assumed away, it will be treated later.

There is, however, a possible loss involved at resale if the defect unperceived by the first owner is noticed by others. But this stretches consumer protection past reasonable limits.

[23]This is particularly true in the case of used products, but also applies for new products. Thus, it should be noted warranties have the effect of equating buying skills if a defect is covered in any event. This characteristic "downgrades" individual buying skills. The following discussion will assume buying skills for new products are approximately equal. For the whole industry, however, warranties also have the above effect. That is, if it is assumed that defects are always corrected, consumers need not be as "careful" in choosing competing products on the basis of the risk of defects.

[24]Examining the product before purchase may not apply as easily for mail order sales or certain appliances which the consumer does not take home directly.

the product represents one means by which an individual consumer can reduce his own risks. Perhaps many complaints of defects could be avoided if consumers would take the time and trouble to examine the product before purchase.[25]

To the extent that some consumers do not examine merchandise before purchase,[26] the risks of defects rise to those consumers. This possibility should create a problem to public policy. Where consumers have the option to purchase a product that they can examine, but refuse to do so, should other consumers share the risks? For example, one reason[27] for buying a car on order is that it is potentially less costly.[28] However, those consumers who exercise this option are in effect choosing a lower price for greater risks. Warranties which distribute these risks to other consumers are not totally justifiable.

Condition III

It is also highly unlikely that the costs of a defect can be assumed to be equal to all consumers. First, repair costs at individual dealerships vary. Thus, certain

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[25]There is no available evidence on the amount of complaints where the product was bought sight unseen.

[26]Or do not insist on doing so where the possibility of an examination is present.

[27]Another reason might be that the particular product in inventory does not have the desired accessories, etc. However, different reasons do not change the example's validity.

[28]Savings can be generated to the dealer due to lower inventory levels that result from not carrying the product. The savings can be passed to the consumer.

geographical regions which experience higher costs receive disproportionate "value" from the same warranty repair.

Second, if inconvenience is included in consumer costs, wide variations may exist. Hence, warranties which attempt to provide for inconvenience on an equal basis treat consumers unequally.

Third, and most important, individuals may have better alternatives for repairing the product. For example, other service institutions may provide the same repairs at lesser costs. Or, certain consumers may possess the skills and the willingness to make many repairs themselves.[29] Or, a consumer may know of a mechanic he can trust, get an appointment with, or expect to repair the product satisfactorily the first time. To the extent that warranties "tie" a consumer to a given dealership, better existing alternatives for service are minimized and the warranty becomes of less value to him. However, those consumers whose alternatives are more limited share disproportionately in the warranty's value.

Condition IV

Differing from the previous three conditions, the conclusion is that the fourth condition is valid. Total warranty costs do exceed market alternatives. The conclusion is based on the following.

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[29]This is extremely important due to the declining proportion of repair costs that is attributable to parts. Depending on one's personal assignment to the cost of his own time, any repairs by a service institution can be considered very costly.

First, as the previous discussion noted, consumers may, on a selective basis, have lesser cost alternatives. Second, better repair performance under a market system is more likely to occur due to competitive factors and more direct relation to repeat sales. Third, manufacturers' warranty reimbursements to dealers are as high as market alternatives, at least on a selective basis. This is due to the fact that other outlets specialize in their service and/or their return on investment may be lower, or their margins are lower. Fourth, there is a tendency for consumers to request that even the most minor defects be corrected.[30] Fifth, there may be a tendency for consumers to mistreat the product under the assumption that the warranty covers everything.[31] Sixth, a significant amount of administrative and control costs are present in warranty systems. Seventh, because warranties operate through only a segment (dealerships) of the total repair industry, the effect is to increase service demands only for that segment.

Therefore, dealerships, representing a high cost alternative to repairing products, leave a warranty system

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[30]Where, were it not for the warranty, many consumers might not find the value in the correction worth the market cost.

[31]Some dealers have suggested that consumers may actually behave in this fashion. However, there is no empirical support nor proof to the contrary. Yet, to the extent that this occurs, and repairs are made, consumers who treat their products poorly receive disproportionate value from a warranty.

with greater costs than alternatives. To the extent that warranty costs are passed to consumers through price increases, total warranty costs can be greater.[32]

The conclusion from the static case is, therefore, that consumers need protection from the risks of defects because the first three conditions are not valid. Some form of warranty is necessary from a public policy viewpoint. The warranty, however, must then be considered in a dynamic context.

Toward a Dynamic Solution

Because warranties deal with the risks of defects, it follows that risk reduction offers potential improvements to warranty systems in addition to risk distribution. Having concluded that some form of warranty is necessary, a dynamic solution requires that risks be reduced consistent with the costs of doing so. In other words, where risks are reduced, the problem of risk distribution grows smaller.

But, the goal of consumer protection is not always enhanced by reducing risks. Any solution to warranty problems in the dynamic case must consider reduction in risks (and hence the problem of risk distribution) in

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[32] If, however, warranty costs cannot be passed to consumers through price increases, it does not follow that manufacturers will assume these costs. First, dealers may bear a large proportion of cost increases. Second, products do not necessarily have to be sold, they can be rented. Thus, manufacturers' responses to changing warranties must be considered. These topics will be treated later.

balance with the costs of reducing risks. Basically three types of risks can be reduced: the risks of a production defect; the risks that warranty provisions will not apply to the defect; and the risks that warranty service is not performed adequately.

Many means of reducing the above risks are possible. Risks of production defects can be reduced through "tighter" quality control at the factory, more careful handling and transport of the product, and increased efforts to find and correct defects during pre-delivery inspection. In short, wherever the product faces a chance of damage or misconstruction, increased efforts can be made to reduce the probability of a defect. The risks that warranty provisions will not apply to a defect can be reduced through re-writing the provisions themselves, interpreting present provisions broadly, or "creating" new provisions through an implied warranty. Risks that warranty service is not performed adequately can be reduced through improvements in legal enforcement procedures.

Reduction of any of the above risks, however, requires increased costs. The policy problem in the dynamic case is, therefore, controlling or reducing risks where possible, without incurring costs that exceed the worth of risk reduction.

Rather than treat all variables simultaneously, it is useful to approach dynamic problems in warranties through successive constraints on decision making. Thus,

if there are justifiably sound reasons for not changing a part of a warranty system, the remaining variables are reduced in number and the size of the problem diminishes.

The constraints which will be considered are the warranty provisions. Warranty provisions are important in the dynamic problem for three reasons. First, provisions directly determine whether a defect is under a warranty. Second, previous material has concluded that performance is related to provisions. And third, the effect of provisions and performance (through costs to the manufacturer-dealer system) has an impact on manufacturers' quality control decisions. Thus, warranty provisions potentially act to reduce risks in the dynamic sense as well as to distribute risks.

Since provisions represent a statement of manufacturers' responsibilities, establishing constraints also yields conclusions and recommendations about the nature of these responsibilities from a public policy viewpoint. Efforts toward a dynamic solution are therefore improvements in a definition of manufacturers' legal responsibilities.

A Definition of Responsibilities

Responsibilities are defined by six major warranty provisions (or constraints). The provisions are considered successively in the following order--compensation, defects included, location, amount of time/use, conditions, and interpretation.

Compensation

There are a variety of alternatives for compensating consumers. Warranties can cover parts only, total direct repair costs, or a percentage thereof. In addition, compensation may provide for inconvenience, time lost, a loaned product during repair completion, and the like.

The most logical conclusion is that warranties should provide for all direct costs and only direct costs of product repairs. In other words, owners should not be billed for any expenses of repairing defects, nor should the owner receive additional compensation for inconvenience.[33] The reasons are as follows:

A primary difficulty of requirements that owners pay for labor or a percentage of repair costs is the potential for consumer deception. Without a pre-arranged statement of labor or total repair costs, the value of a warranty is inestimable. Labor costs or repair costs can be artificially adjusted upward.[34] Hence, it is possible that the warranty in actuality pays for nothing, or a smaller part of costs than originally perceived by consumers. It is also possible, through "clever" wording of communications, that some consumers may not understand that any payments for service are required by them.

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[33]Whatever the form of compensation.

[34]Labor costs can be adjusted either through the hourly rate or the time for repairs.

On the other hand, added compensation for inconvenience is discriminatory. Although consumers' utilities for defect risks require that repair costs be shifted to other consumers, payments for inconvenience do not. Inconvenience differs dramatically among consumers. Many short term alternatives for transportation exist.[35] And, personal time lost, or irritation involved, occurs with far different "costs" to individuals. To spread inconvenience costs among a products' consumers discriminates in favor of persons whose time value and/or irritation level far exceeds others.

Yet another reason for no payment for inconvenience is related to system control. One explanation for partial compensation is that it reduces false claims.[36] When consumers must pay part of repair expenses, it is more reasonable to assume that warranty claims relate to defects. However, if inconvenience is totally compensated, the owner is in a "no lose" situation.[37] The consumer may in fact stand to gain by replacing a part that is partially worn out due to normal use. Thus, some inconvenience, associated

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[35]Mass transit, car pools, a second car, and the like serve as alternatives and may, incidently be more ecologically desirable.

[36]Much in the same fashion that a deductible insurance policy reduces false claims and, in addition, many small claims. (It should be obvious that false claims injure other consumers as well as the manufacturer.)

[37]This may partially explain some reports where consumers present dealers with long lists of "defects." As long as one is "making the trip" for a legitimate claim, he may as well "get his money's worth."

with well-performed repairs, acts in a small[38] fashion to reduce false claims.[39]

Defects Included

Warranties can cover all product parts, all adjustments to insure that the product is in proper working order, or some portion thereof. Relative to product parts, the author's conclusion is that an automobile warranty should cover all parts except tires.[40] The reason for covering all parts is that the probability that a particular part is, or will be, defective is generally unknown to consumers. Warranties which cover selected parts have the potential of being deceptive. Thus, consumers may misinterpret a long warranty which covers parts that have a small chance of failure, and excludes other parts that are more likely

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[38]The fact that control over false claims grows smaller with increased compensation points to the interactive effect of warranty provisions. As will be shown later, the lack of control through compensation must be counterbalanced by controls through other provisions. The converse is also true. Thus, the order of constraint formation is important to the recommendations presented here for two reasons. First, starting with another constraint may yield different conclusions. Second, the constraints (or provisions) cannot be viewed independently. Thus, change in one provision must consider its impact on all others.

[39]However, major inconvenience also reduces legitimate claims. This problem is treated later under performance.

[40]Tires represent a special class of warranties and will be discussed later under conditions. It should be noted, however, that technically (but unrealistically) tires do not have to be sold as part of the car. Many consumers buy lamps without light bulbs or radios without batteries.

to fail. Moreover, excluding parts which are more costly to repair destroys the risk distribution function of a warranty.

The conclusion relative to adjustments is more complicated. Basically, any product, such as an automobile, requires periodic upkeep and maintenance (regular service). That the product will eventually need regular service is not uncertain, and hence involves no risk. Because the owner is the primary cause of regular wear and necessary maintenance, and because many alternatives are present for service;[41] warranties should avoid covering regular product service requirements. Pre-paid service, known to be required in the future, reduces consumers' alternatives for less costly repairs, reduces competition, and creates the further problem that service paid for may not be performed.[42] For example, to shift the cost of faulty alignments (which are usually due to the driver's actions) to other consumers allocates costs improperly. Similar types of repairs give undue consideration to consumers who do not take care of their products at the expense of those who do. However, a further conclusion is that regular service should be performed under warranty for a period[43] long enough to

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[41] See the previous discussion under the costs of repairs.

[42] Pre-paid service also has additional problems which may be far more significant. These will be treated later.

[43] The "length" of warranties will be treated in further detail later under time/use provisions.

insure that the owner received a product that is, at some point in time, in proper working condition. The reasons for this follow.

Many warranty complaints do not relate directly to a product part, but instead, relate to the product's operation. In addition, some complaints relate to charges that service, not under the warranty, is also performed.[44] There is evidence, moreover, to suggest that some dealers inadequately prepare cars before delivery. It may also happen that the product's "poor" performance is due to a defect in the original parts which require periodic replacement. Or, it may be that "poor" performance is related to a defect in another part under warranty. However, the possibility that the consumer may first be required to pay for a tune-up, front-end alignment or wheel balancing to be sure that the "problem" is elsewhere is to be avoided.[45] Thus, for automobiles,[46] warranties should cover regular service.[47]

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[44]See Chapter I.

[45]All too often regular car service to correct a problem goes through a series of needless repairs only to find that the problem could have been corrected by a simple repair completed first. The extent to which this is due to improper diagnosis or cheating is unknown. However, the character of warranties which ties the owner to a dealership to repair "legitimate" defects gives an undue "advantage" to an unscrupulous operator. (However few there may be.)

[46]The same conclusion may not hold for other products. For example, some products are more costly to repair than the entire product itself.

[47]However, the time period need not be as long as the warranty on parts.

Location

While many possible locations can be specified, warranty service should only be granted through the dealer who sold the product.[48] The reasons for this provision are related to warranty performance and will be discussed later in that context.

Amount of Time/Use

Perhaps no other provision has generated as much concern and confusion as the amount of time and/or use for which a warranty remains valid. Conclusions relative to this provision are based on the product failure distribution which follows.

Product failure occurs where a product fails to meet the expectations of an individual consumer and such expectations can be met by altering the physical product's condition. Warranty repairs are potentially necessary when a product failure occurs.

Warranty systems must therefore deal with product failures which the consumer claims are product defects.[49] Defects are a subset of product failures. And, the critical task of a warranty system is to "separate" defects from product wear.

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[48]With the possible exception that the manufacturer may own and operate as many warranty service outlets as he desires. However, a dealer who did not sell the product should not perform warranty service.

[49]See the previous definition of defects in this Chapter.

The task of separating defects from product wear is reduced substantially by a "proper" statement of the time/use provision. Such a statement, and the proper time/use selection, are related to the product failure distribution.

A frequency distribution of product failures is comprised of two distributions. Figure 6 illustrates a theoretical total product failure frequency distribution.[50] The distribution on the left is failures due to defects, which are attributable to manufacturers' actions. The distribution on the right is comprised of product wear, which is attributable to consumers' actions.

In Figure 6, the distribution of defects[51] cuts the y axis at some point above zero. This illustrates that defects can be discovered before any use. The distribution also rises with use, illustrating that the frequency of defects is greater after the product is in use.[52] And, the distribution "decays" and becomes

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[50] It is assumed temporarily that (1) this distribution applies to one component part, say a fuel pump, (2) the total amount of products under consideration is fixed, and (3) failure is in reference to the first failure only. That is, a product which is repaired and fails again is not included the second time.

[51] This distribution will be referred to as the defect distribution in the remaining material. In similar fashion the remaining distribution will be called the product wear distribution.

[52] This is due to two factors; first, that the owner may not have initially discovered a defect; and second, that some defects occur only after a certain amount of use due to technological factors. For example, many products initially test "good" on equipment but may later prove defective.

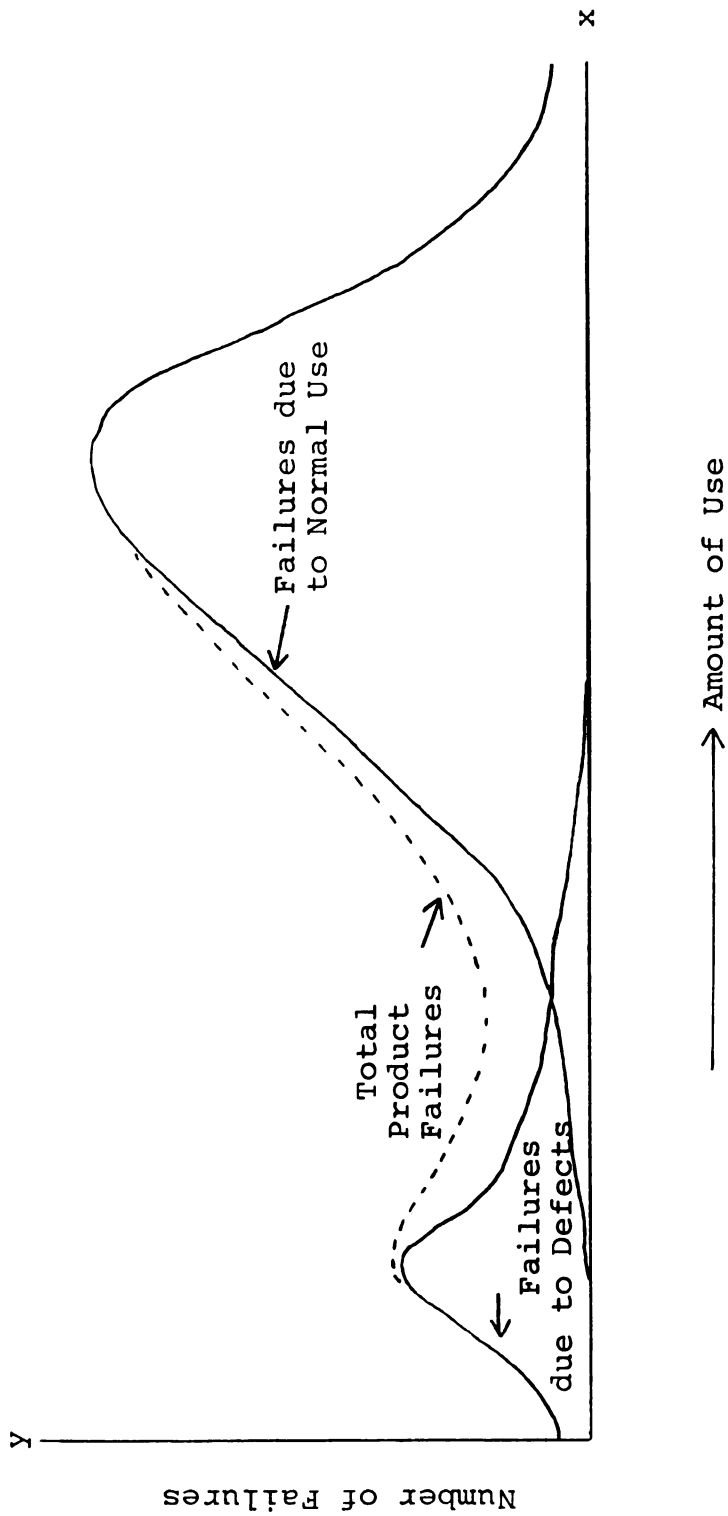

Figure 6.--A Theoretical Product Failure Frequency Distribution.

asymtotic to the x axis, illustrating that no matter how much use a product receives, there is always a possibility of failure due to a defect.

The product wear distribution starts at zero, rises to a point where most products fail for the first time, and then declines.

The total frequency distribution can be converted into a probability distribution[53] for a single product part. The importance of the resultant probability distributions lies in their interrelationships at any chosen amount of use.

From a public policy viewpoint, two types of errors can be made in selecting any given amount of use for inclusion under a warranty:

Type I Error --the error that the individual owner is not compensated for a product failure due to defects--and therefore the individual bears both the costs and risks of defects.

Type II Error--the error that the individual is compensated for a product failure not due to a defect--and therefore other consumers bear the costs and risks of repairs not due to defects.

Neither of the above two errors are desirable from a policy viewpoint. However, both errors are present regardless of the amount of use that is stipulated. In other words, no

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[53]The restriction is that the total probability under the product failure curve is one.

matter what amount of use covered under a warranty, it is never absolutely certain that all defects are covered. Hence, the risks of defects and their costs to individuals cannot be eliminated. However, attempts to reduce or to eliminate these risks, by increasing the amount of use, increase the risks (and costs) that other consumers bear. Thus, increasing warranty coverage to aid specific individuals may not serve as "protection" to all consumers.

In reference to the probability distribution, as the amount of use under a warranty is increased, the total probability of Type I Error[54] grows smaller while the total probability of Type II Error grows larger. It is theoretically possible to measure both errors if the distributions can be approximated. Thus, a degree of confidence in measuring and controlling both errors is possible for any stipulated amount of use. As an approach to answering what that amount should be, it is useful to consider several additional characteristics of product failure distributions.

First, there are many different possible product failure distributions for a given product and the distributions need not be exactly alike. The distribution in Figure 6 illustrates only one component. However, it is possible to have many different use stipulations under a warranty based on different product failure distributions for different product parts.

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[54]Measured by the area under the defect distribution curve.

Second, the necessity for reducing risks depends, in part, on the cost of a given failure. Thus, some parts may require longer or shorter use stipulations because of the magnitude of the potential loss involved. For example, it may be considered more desirable to protect consumers from defect risks of an expensive component than of a relatively inexpensive component, even though the probability of failure for the inexpensive component may be higher.

Third, the distributions assume normal care and use. If the product is abused, the decision about the amount of use is affected.[55]

Fourth, the statement of an amount of use may have an effect on how consumers treat the product. Many dealers and used car salesmen have suggested that consumers have mistreated their cars to a greater extent under longer warranties. Thus, if this effect is present, it should have a bearing on the stipulated use amount.[56]

Fifth, because amounts of use are also associated with time, and because amounts of use are difficult to measure accurately,[57] a time stipulation may be used in

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[55]This matter will be treated under the conditions provision in the following section.

[56]To anyone who has traveled to a foreign country, the existence of older cars provide ample evidence to suggest that normal use and care is also culture bound.

[57]One difficulty that dealers faced with longer car warranties deals with odometers. Because of a common practice of changing odometers in the resale of cars (and some consumers who disconnect odometers to cheat under warranties), the possibility that a 50,000 mile warranty is "extended" by twice that amount is present.

addition to, or in place of, the amount of use. The accuracy in estimating use for a given time period, thus presents an additional consideration.

With the above considerations in mind, we shall now consider what amount of use should be stipulated under a warranty. Figure 7 is drawn to represent a total product failure distribution for all product parts, with the exception of parts required for regular service.[58] In constructing Figure 7, several assumptions are implicit.

First, the defect distribution is comprised of the defect distributions of each of the parts under consideration. However, for each of the separate distributions,of the total defect distribution, it is most likely that a defect occurs before an amount of use at point B. Thus, whether the part is a fuel pump, transmission, or rocker-arm assembly, most product defects will be discovered in the amount of use up to point B.

Second, the means of the separate parts of product wear distributions may be different. Hence, the distribution of product wear represents a composite of parts, each of which may have different properties. For example, for one part, point C could represent the theoretical "design life." In constructing Figure 7, point C[59] is actually comprised of the mean of all design life means for each

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[58]These parts are assumed to have a much "shorter" life and are discussed separately later.

[59]Point C is in reference to the mean of the product wear distribution.

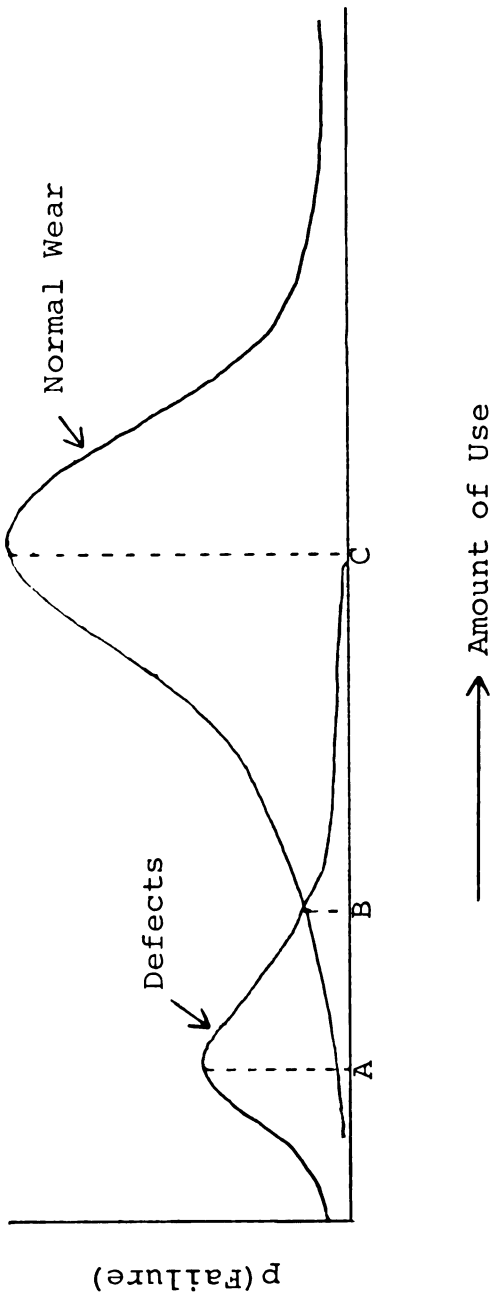

Figure 7.--A Theoretical Probability Distribution for Product Failure Components.

part. Thus, the design life of a windshield could be for twice the amount of use than a transmission. However, all of the parts wear distributions are combined[60] in one distribution.

Third, the mean of the product wear distribution lies to the right of the defect distribution's mean. Thus, there is always a greater likelihood that products will be discovered defective before they wear out.[61]

Given that a product has failed at some point over the total range of use, points A, B, and C represent the following.

At point[62] A, the probability that the failure was due to a defect is highest within the distribution of defects. Moreover, the probability that the failure was due to a defect rather than normal use is relatively higher than any other point. At point B, there is an equal probability that the product's failure resulted from a defect or normal use. At point C, the probability of product failure due to use is relatively greatest. Point C also represents the theoretical "design life" of the product. The thesis conclusion is that the amount of use

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[60] With the previous exception of service parts.

[61] The total product failure curve is not shown in Figure 7, however, it exists above both separate distributions.

[62] Technically, the points have zero probability. However, it is assumed that the "points" are in reference to an arbitrarily small interval measured around the point.

under a warranty should be set at or near point B. The reasons are listed below.

Basically, a "perfect" warranty would involve making repairs to only those products in the defect distribution. However, for any given product failure, it is highly unlikely that a dealer[63] can determine the exact cause of a product failure. But control over Type I and Type II Errors can be gained by stipulating an amount of use. The public policy problem is then one of determining an "acceptable" level of both errors.

Acceptable levels of error, are related to two factors: first, the error for any given individual decision about the cause of product failure; and second, the total amount of error for all product failure decisions. Thus, it is desirable to be relatively certain that defects are not identified as product wear (and hence incur a Type I Error). And, it is also desirable that the total number of instances in which product wear is identified as a defect is small (hence total Type II Error relatively small).

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[63]Or any trained product expert, court, or manufacturers' representative.

At point A, it is likely that a given failure was the result of a defect. Thus, confidence in inferences[64] about the cause of failure is "high" at this point. However, with extensions in the amount of use beyond point A, total Type I Error can be reduced. Moreover, the marginal reduction in total Type I Error is greater than the marginal increase in total Type II Error until point B is reached. Therefore, because the predominate goal of warranties in reducing risks is to reduce total Type I Error, point A is rejected.

But point C is also rejected because of its relationship to dealer interpretations, performance, potential for consumer deception, and the product's design life. For example, the only legitimate purpose for extending coverage beyond point B is to "capture" the right tail of the defect distribution and hence a very small percentage of defective products. At point C, a dealer could legitimately conclude that the product's failure was due to normal use with a relatively high degree of confidence. However, to extend

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[64]At any one point, an inference or interpretation of the cause of product failure can be made. Confidence in inferences are "high" here in the sense that an individual interpretation can be compared to a "one tail test" of a hypothesis. Where the null hypothesis is that failure is due to a wear, this hypothesis is rejected in favor of the alternate (that failure is due to a defect) where significant contrary evidence exists. However, the purpose of consumer protection should imply a reversal in the hypothesis. Hence, only significant evidence of product wear should lead one to conclude that the product was not defective. Thus, a greater amount of use should be chosen.

warranties to this point unnecessarily forces a great amount of interpretation. Thus, the number of potential instances in which dealers may cheat the manufacturer are increased. Also, the number of instances in which consumers may feel cheated by dealers (but actually not be) are increased.

Extending warranties to point C also increases the potential for consumer deception. Because the probability of a defect beyond point B is increasingly small, useful reasons for extending warranty coverage may be obscured. That is, where the probability of a defect is practically non-existent, extending warranties to cover "non-existent" defects can be highly misleading to consumers.[65]

Yet another reason for rejecting point C is its relationship to the product's design life. Consider, as a simple example, the case of a light bulb which has a design life of 1,000 hours. To require replacement of light bulbs that barely did not reach their design life results in a peculiar set of circumstances. Those consumers who owned light bulbs which failed before 1,000 hours would get a new product. Those consumers who were "fortunate" enough to receive more than 1,000 hours of service would not. Under these circumstances it is possible that some consumers in the latter group might attempt to "force" their products to fail before 1,000 hours. In short,

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[65]See the discussion of consumers' responses to warranties in the preceding chapter.

warranty extensions at or near the product's design life could result in perpetual replacement of the product.[66]

Having rejected points A and C, the amount of use should therefore fall near point B. Therefore, warranties should be extended only to encompass use to the point where the most reasonable assessment is that product failure is due to owner use rather than to a defect. Warranties should not be extended beyond this point. A point slightly to the right of point B fulfills this criteria. Point B is the point at which the likelihood of failure due to a defect equals that of failure due to wear. At a point slightly to the right, the most reasonable assessment of the cause of a product failure is that the product simply failed due to wear. Moreover, the chances that a defect will be the cause of failure with increased amounts of use are progressively smaller in total. And, the chances that products fail due to wear are larger.

To aid in the explanations which follow, and to provide an illustration, it is assumed here that points A, B, and C fall at 5,000 miles, 12,000 miles, and 100,000 miles respectively.[67] Thus, a warranty of approximately 15,000 miles should serve as the proper amount of use.

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[66]Additionally, consumers who received nearly the full life of the product hardly need protection against defects.

[67]These figures are based on interviews with various persons in the industry and the author's best estimate. However, it is hoped that within this framework future research can reveal estimates based on "empirical" data.

Based on 15,000 miles, this figure can now be converted into a time period.[68] The time period should be chosen to approximate 15,000 miles based on the average amount of use of the product's potential owners. But, because warranties should attempt to be clear and understandable to consumers, the time period need not be exactly calculated. Thus, in intervals of three months, the amount of time can be stipulated. The time period should therefore be for one year only.[69]

In addition, the analysis leads the author to the conclusion that warranty should provide for 15,000 or one year, "whichever comes first." The result of the "whichever comes first" provision may be that some consumers do not use the product for the full 15,000 miles. However, because the analysis suggests that warranties should not be transferred,[70] and because consumers are well aware of the "risks" that they, as individuals, might not use the product for the full 15,000 miles during the first year, the provision should be included.

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[68]For many products only a time period is stated. Hence, the dispersion in the product wear distribution is due to amounts of use in addition to the dispersion due to various degrees of normal use. However, it still remains that the amount of use is implicit in the statement of time.

[69]The result of a one-year time period for automobiles also avoids another problem with automobiles. A later conclusion is that warranties should not be transferable. In that most automobiles are owned for a period of at least one year, this should not produce undue complaints about non-transferability.

[70]A conclusion to be stated later. See the previous footnote.

The previous discussion has excluded normal service parts.[71] Service parts by their very nature have shorter design lives and may be expected to wear out sooner. However, for the reasons discussed earlier,[72] all parts should be covered under a warranty for some amount of time and/or use. Based on the reasoning of the previous discussion, service parts are similar to other vehicle parts except that their total product failure distribution occurs within shorter amounts of time and use. Therefore, service parts and adjustments to the vehicle should be covered for 3,000 miles or 90 days, whichever comes first.

All of the previous provisions should be subject to certain conditions which are the subject of the next provision.

Conditions

The basic determinant of warranty conditions is the extent to which consumers themselves may damage the product.[73] The problem of an unconditional warranty, if

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[71]The exact parts which should be included as normal service parts will not be defined here. Basically, such parts are spark plugs, oil, filters, points, PCV valves and the like. Product experts should be able to identify these items in the context of the argument which follows. It is important, however, that a full list of risk items appear in the warranty document to consumers.

[72]See the discussion under the parts provision in this chapter.

[73]A truly unconditional warranty is a rare occurrence. Products such as hand wrenches serve as "typical" products which cannot be damaged except under the most unusual circumstances. However, where unconditional warranties exist for these products, some consumers intentionally damage older products in order to receive new ones.

honored, is demonstrated in Figure 8.

In Figure 8 another distribution is added to the product failure distribution discussed earlier. This distribution of failures due to abuse, or misuse of the product, appears at the extreme left in the diagram. Its character and placement are critical to warranty conditions.

Consumers may at any time damage or destroy a product due to an accident caused by the consumer himself. If warranties cover such events, a Type II Error is committed. Other consumers would be forced to bear the risks and costs of product failures due to accident and carelessness of a portion of the product's owners. The conclusion is, therefore, that warranties should not cover product failures due to accidents.

But it should be obvious that many types of consumer actions can seriously damage products where no accident occurs. Certainly anyone familiar with stock-car racing has seen ample evidence that major parts of a car can be destroyed within 200 miles of use.[74] The character of consumer use associated with automobiles creates some of

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[74]A classic example of a warranty of fitness uses stock car racing as an illustration. See Chapter III.

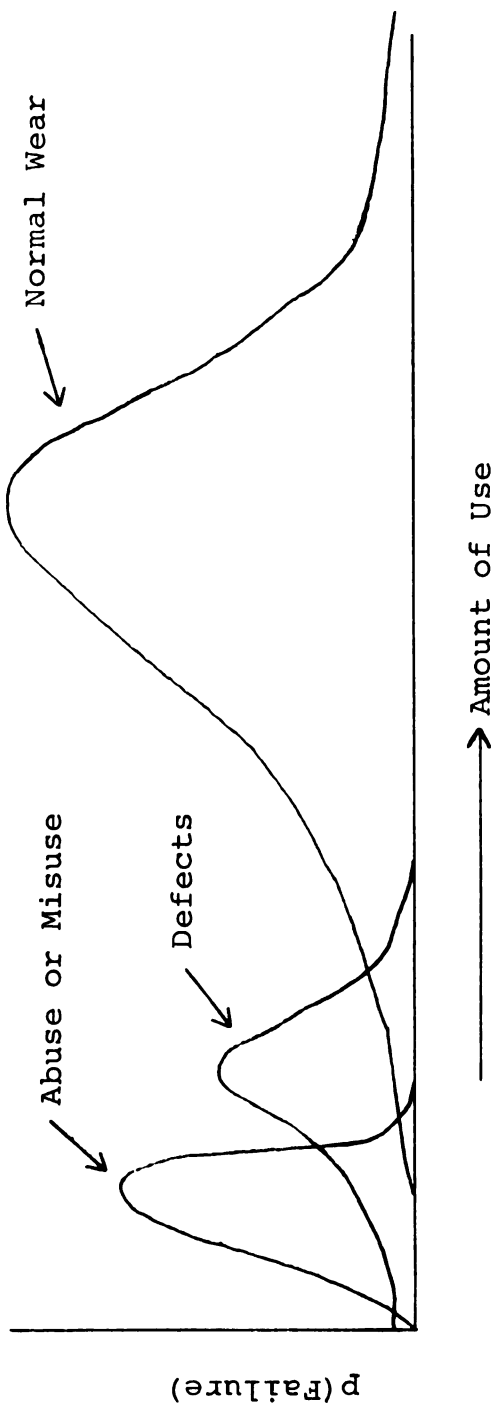

Figure 8.--Misuse as a Component of Product Failure.

the most difficult problems to their particular warranty systems.

For example, the most common use of a television is turning it on and off and watching it. Barring obvious dents or holes, a television's early failure may be presumed to be due to a defect. However, automobiles are, in a sense, much more fragile products.

Returning to Figure 8, an early product failure can be due either to abuse or to a defect. However, abuse is individualistic in nature. Thus, the abuse distribution does not occur randomly to all owners nor can it be considered a risk to all consumers.[75] To require all consumers to bear the costs of those individuals who abuse their products does not serve the interests of consumer protection. Hence, it is necessary to exclude certain parts and to create conditions under which a warranty remains valid.

For example, application of the above reasoning is the justification for the previous two exclusions. Where a dealer notices that the total tread is worn off the rear tires after 500 miles of use, a tire defect is not the most probable explanation. Due to the large impact of consumer

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[75]Thus, Figure 8 represents a distribution for one particular consumer.

use patterns on tire wear and dependability,[76] the solution is to exclude tires from the warranty.[77]

Warranties should, therefore, be invalid where the product has been subjected to abnormal[78] use or lack of sufficient maintenance.[79] However, invalidation should only be relative to the part or parts in question rather than the entire warranty. That is, failure to change engine oil should not invalidate the warranty covering an air conditioner. Or, failure to lubricate the automobile should not invalidate repairs to a leak in the trunk.

A final condition of the warranty should be that it applies to the first owner only. The basic reasoning

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[76]Because of consumer use patterns, an entirely different set of provisions typically exists for tires. Thus, starting with an unconditional provision, compensation and reimbursement rates are calculated quite differently. Tires thus serve as an illustration of a different product class and its affect on provisions.

[77]Consumer use patterns also present a probable explanation for many of the exclusions noted in Chapter I. Specifically, filters, oil, brake linings, lights, and the like. However, for reasons mentioned earlier (see the previous section on defects included) these items should not be totally excluded from warranties.

[78]Abnormal use must be interpreted relative to the product's design. Thus, what may be considered abnormal for a regular passenger car may not be so considered abnormal for a four-wheel drive truck.

[79]Maintaining the vehicle properly for a warranty is a likely reason that some warranties provide for a "free" periodic maintenance. However, the conclusion here does not so provide because of the effect on competition and the performance of the warranty system. These matters will be discussed later. At this point, the only requirement intended is that the car be properly maintained with the burden of proof to the contrary upon the dealer.

relates to warranty system performance which will be discussed later.

In summary, the conditions should require that the product be free from abuse, and that the warranty only apply to the first owner. Under these conditions, a critical matter is the interpretation of what constitutes abuse to the product. This matter is the subject of the final provision.

Interpretations

The interpretations provision involves a choice of persons or institutions which must decide whether or not a warranty applies for a given product failure. While many choices are available, the conclusion is that the dealer should be the primary source of warranty interpretations.[80] In addition to the dealer, a manufacturer's representative or ultimately a court may be involved. However, the basic intent of this provision is that the initial warranty decision be reached at the dealership with later recourse to the manufacturer or a court.

Although many criticisms of warranty systems have been directed toward dealer interpretations,[81] there are several reasons that dealers should make these interpretations.

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[80]Obviously courts serve as one source since a warranty does have legal status. However, other initial alternatives such as an ombudsman, an insurance adjustor, or some sort of consumer representative have been suggested. These alternatives will be treated later.

[81]See Chapter I.

The first is related to warranty system administration costs. Because warranty conditions must be interpreted, and because time/mileage certifications must be made, it follows that a vast organization must be developed to handle product warranties on a nationwide basis. Since repairs are made at the dealership, it also follows that dealers represent a readily available organization. Dealers, therefore, represent the lowest cost alternative to making interpretations. Any other administrative organization would be in addition to the dealer organization.

Yet costs are not the only relevant consideration. Interpretations bear an important relationship to the system's performance. Thus, interpretations must be made within a reasonable amount of time and with a reasonable accuracy and fairness. Dealers offer a potential advantage over alternatives[82] for reasonably quick settlements of warranty claims.

The only substantial issue with dealer interpretations is the accuracy and fairness with which they are made. This issue then depends on the system's performance under dealer interpretations and the extent to which performance can be improved. Improved performance is the subject of the next section.

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[82]Unless other alternatives would include enough available personnel for as many or more hours and locations as dealers. However, such an arrangement would be excessively costly if the volume of warranty claims does not justify it.

Improving Performance[83]

Improving warranty system performance is a complex and difficult task. The following discussion focuses on two matters: identification of the major causes of poor performance; and alternatives that will most likely alter these causes and thereby improve performance.

Where consumers have faced poor performance under warranties,[84] there can be no question that the immediate cause of such performance has been dealers' actions. Because dealers are responsible for completing warranty repairs, they must also, by definition, be a cause of poor performance.

But, dealers are legally agents of manufacturers. Manufacturers actually grant warranties and are legally responsible for performance. And, manufacturers exercise certain controls over dealers' actions.[85] Thus, manufacturers bear a relation to poor performance.

Yet, the major cause of poor performance is neither manufacturers' nor dealers' actions per se. Rather, it is

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[83]Performance as used in this section refers to the courtesy, accuracy, efficiency, and other general activities which accompany the physical repairs to the product. A much broader issue of performance relates to "market performance." The latter involves those issues and measurements relating to the total impact of warranties within and among industries. Market performance will be treated later in this chapter.

[84]See Chapter I, consumer complaints.

[85]Chapter VI has treated the nature and extent of manufacturers' controls.

based in the structure and operation of warranty systems. Performance is related to an entire system and performance improvements must deal with a whole system. Specificially, there are two probable causes of poor performance. They are the relation between sales and warranty service at individual dealerships, and the stability of the entire warranty system.

Sales and Warranty Service

It can be argued that dealers have incentives to satisfactorily perform warranty repairs because of the impact of such repairs on repeat product sales and other services that a dealer offers.[86] This argument, however, is valid only if satisfactory performance and repeat sales occur within the same dealership. Thus, while a strong relation between warranty service and repeat purchases may exist for the entire system, it may not exist for an individual dealer.

For example, many warranties have provided that warranty repairs can be made at any authorized dealership. This provision may likely have the following effect. Any given dealer may attempt to increase sales by lowering margins. The result is potentially broader territorial sales with an increased probability that the dealer will

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[86]This argument has been advanced by manufacturers. See Chapter VI.

not be performing warranty service on many of the cars he sells.[87]

Accompanying statements that the warranty is good at any dealership, certain dealers may succeed in selling cars at prices that would not be justified if warranty service were to accompany the product. This action, in addition to those of dealers who seek short-run gain by selling more cars than they can service[88] creates performance problems for the system. Thus, it is entirely possible that a given dealer may be requested to make repairs on a product which he did not sell (and for a consumer who will not likely return).

Buying the product from one retailer and seeking service at another is termed channel switching. That is, a consumer switches from one vertical set of institutions to another. The same manufacturer, however, may exist in both channels.

Evidence of the extent and frequency of channel switching in the automobile industry is not available.[89]

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[87]This may also occur on a selective basis. For example, a perceptive dealer may be able to recognize those customers who are coming to his dealership for a "price deal" only. Thus, out-of-state customers or those from an area far distant from the dealership may never be seen again after the sale.

[88]Fleet sales which are also made through one particular dealer may bear no relation to the dealer's territory.

[89]However, this activity may likely be more prevalent in other industries. For example, many televisions are now carried through discount houses as well as the traditional franchised outlets.

Where it occurs in any great amount, however, it is likely to affect dealers' attitudes.[90] When dealers service cars that they did not sell and when dealers feel that warranty service is unprofitable,[91] dealer response is likely to take the form of one of the following; the dealer may simply refuse service, he may attempt to find other necessary repairs, or he may devote less than his best efforts to these customers.[92]

The relation between warranty service and sales, however, is only a part of a broader relation between all repair services and potential repeat sales. This latter relation involves the stability of warranty systems, the second major factor affecting performance.

Warranty System Stability

Manufacturers have long argued the necessity for good service along with product sales. A critical element of good service, however, is an adequate service capacity

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[90] Interviews conducted by the author with dealers have revealed a great displeasure for those "customers" who have driven to another territory to save $50.00 on the purchase price and then expect their local dealer to greet them for warranty services.

[91] See Chapter VI in relation to warranty profitability.

[92] These are some of the common performance complaints that were listed in Chapter I. In all of the studies conducted relative to performance, however, no distinction or mention was made as to whether or not the alleged poor performance occurred at the selling dealership. More than likely, many complaints were registered against the dealer who sold the car. However, to the extent that channel switching occurs, one likely cause of poor performance exists.

for the total system of dealerships and adequate capacity relative to product sales at each dealership.

Chapter VI analyzed the affect of capacity on the systems' costs. In that chapter it was suggested that the amount of repairs coupled with capacity affect the system's performance. It is useful to again consider these factors in the context of performance variations.

To achieve the goal of offering satisfactory service in addition to product sales, each individual dealer must adjust service capacity. Projections of sales, repairs for regular customer service, reconditioning of used cars, and warranty service, are required for a planned service approach. Mechanics must be trained, facilities constructed, schedules established, and inventories maintained. Thus, a series of adjustments at each dealership are required to bring proper service in to balance with projected needs.

Consider, the effect of changes in warranty service requirements upon a dealership whose capacity is presently properly adjusted. If over a period of five years a warranty changes from a 90 day provision to a two year provision, to a five year provision and back to a one year provision, the effect on capacity requirements may be dramatic. Warranty repairs, that may vary between 10 percent to 30 percent of service capacity, will in turn require continual response adjustments. Thus, a highly unstable

pattern of warranty service requirements confronts each individual dealer. This pattern, coupled with the possibility of future change, creates an instability throughout the entire warranty system. As a result, performance is affected.

For example, Chapter VI suggested that dealers who face over-capacity may be more willing to complete additinal warranty repairs. For those dealers at full capacity, however, added warranty repairs must be made in place of potentially more profitable service. Thus, either capacity must be adjusted or a likely result is that dealers resent warranty service.

Without any assurance that warranties will not be changed in the future, dealers decisions relative to adjusting capacity adjustments become speculative. If dealers feel that future warranty service will be reduced as a result of another change in warranties, they are not likely to increase capacity to meet short run requirements. Since warranties can be changed much easier and faster than service capacity, the relative stability of the system is a likely cause of poor performance.

Toward Improved Performance

The preceding discussion suggests the following. First, the more stable the warranty system, the greater the likelihood of improved performance. Second, the greater the relation between warranty service and sales, the greater the likelihood of improved performance.

While many possible alternatives exist for improving performance, the adoption of the previous provisions[93] will most likely improve warranty system performance without incurring unnecessarily high costs and without the necessity of additional legal changes by government. There are several reasons for this conclusion.

First, a previous provision suggested that warranty service be performed only at the dealership which sold the product. Channel switching is thereby reduced and a potentially stronger relation exists between warranty service repairs and dealer sales. The dealer then has a stronger incentive to perform warranty service properly.

Second, adoption of a single unchanging warranty policy, especially in regard to the time/use provision, should have the likely effect of increased system stability. Since continual change in warranty provisions produces system instability and, since systems instability in turn produces poor performance, holding the provisions constant should permit dealers to respond to the service requirements.

Third, strengthening the relation between dealer sales and warranty service, while at the same time allowing dealerships an opportunity to respond to service requirements, places a greater responsibility directly on individual dealers. Hence, market pressures through consumer actions can be focused more clearly on a particular dealership

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[93]Discussed in this chapter.

rather than on the entire system. Also, because any warranty is potentially enforceable by legal action, court proceedings can be focused more efficiently on alleged irresponsible actions of a particular dealer.

Fourth, each of the above changes can be made without substantially increasing costs. While improvements in warranty systems can always be "forced" by manufacturers, courts, and various regulatory structures, each of these alternatives requires additional expenditures.[94] To the extent that the system can be self-regulatory through market pressures, the costs are likely to be much less. The author's conclusion is, therefore, that warranty system performance can be improved through the statements of provisions.

This chapter has described manufacturers' legal responsibilities in the following form.

1) Compensation--no charges to the owner for any parts, service, or repairs completed within the time/use provisions.

2) Time/use And defects Included --3,000 miles or 3 months (whichever occurs first) on the entire vehicle and 15,000 miles or 12 months (whichever occurs first) on all parts which do not require replacement as part of regular maintenance (a complete list of all regular maintenance parts and adjustments is included). Tires are not included.

3) Location--all repairs must be completed at the dealership which sold the product. (It is the responsibility of the owner to pay all expenses necessary to return the product to the dealership.)

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[94] A discussion of other alternatives is presented in the latter part of this chapter.

4) Conditions--the above provisions should apply only to the first owner after retail sale. The provisions do not apply to those parts damaged as a result of an accident, misuse, or extreme negligence.

5) Interpretations--the dealer or a manufacturers' representative shall make all interpretations of the above provisions and the nature of necessary repairs. (with the exception of interpretations made in a court of law.)

It was further concluded that the acceptance of the above provisions would act to improve performance through the relationship of sales to service at individual dealerships and through increased system stability.

But, justifications for the above conclusions have thus far been based primarily on the internal operations and performance of automobile warranty systems. There are, in addition, justifications and conclusions that are much broader in nature that relate to material in preceding chapters. Thus, the preceding discussion must be viewed in a broader context.

The purpose of the following discussion is therefore to summarize earlier conclusions, develop a relationship of the provisions presented in this chapter to market performance, draw additional conclusions for improving warranties, and provide a general perspective over other types of products and warranties.

No attempt has been made to identify acceptance of the previous provisions as a totally optimal solution. Other alternatives exist. An important part of the thesis

conclusions relate to the likely effect of alternative changes in statements of legal responsibilities. Thus, being able to identify what should not be done, or determining likely results of various alternatives, can be as significant as choosing an alternative which may not solve all problems.

CHAPTER VIII

SUMMARY AND CONCLUSIONS

The first chapter identified many warranty problems. The problem area of this dissertation was delineated to include automobile manufacturers' legal responsibilities to consumers for product defects.

Chapters II and III discussed the conceptual nature of defects and the difficulties of treating defects in a legal context. They highlighted the control problem of risk distribution. They indicated that the problem of defining defects and distributing risks thereof is a critical public policy issue. Yet different approaches exist in both law and marketing theory.

The material of Chapter IV suggests that there may indeed be a difference between an ethical response to product defects and the required legal response. Ethically a firm should repair product defects whenever and wherever they occur.

For example, a business firm, through its marketing efforts, endeavors to create an expected set of values to consumers through a product or service. This expected set

of values is part of a marketing mix. Where a consumer's expectations have been violated by virtue of a physical product condition, and where such a product condition also violates an intended marketing mix, the ethical obligation of the firm is to repair the product.[1] This ethical obligation exists independent of legal stipulations or contractual obligations.

But ethical obligations and definitions of legal responsibilities may have reference to separately distinct actions in actual practice. Ethical obligations bear a relationship to individual expectations and are not subject to broad generalizations. Attempts to incorporate an ethical approach into law fall short of actually doing so. Thus, Chapter III identified warranty law as representing a very high definitional standard of ethical practices in certain circumstances. But, as Chapter III has also suggested, the actual implementation of warranty law leaves much to be desired in the context of legal costs, today's distribution structures, and consumers' knowledge of both the law and marketing practice.

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[1]However, "repairing" the product must be viewed in a much broader sense. Thus, reaching a reasonable settlement over damages serves as an alternative. The obligation as it exists here requires that reasonable expectations of the individual consumer are not denied. For example, in one instance, a car manufacturer reached the conclusion that an eight year old car frame should not have broken due to apparent rust deterioration. But, instead of repairing the frame, a settlement was reached slightly in excess of the car's value. More than likely, the owner had no legal recourse in this instance.

Legal costs present major barriers to individually deciding cases which involve small monetary amounts. Firm's pre-purchase marketing activities[2] are directed toward groups of consumers, not individuals. Most consumers cannot attach the slightest meaning to "this warranty is offered in lieu of all others express or implied, including warranties of merchantability or fitness for a particular purpose." Moreover, few consumers ever communicate with the manufacturer of the products they buy.

Many modifications of warranty law and case precedents have been introduced to keep pace with the changing nature of legal costs, marketing practice, and consumers which they seek to serve. But, as a result of the above factors, the basic premise of warranty law as an individual bargaining process is lost. Individual bargains, no matter how broadly construed or modified, do not occur. Manufacturers deal with groups. Consumers do not understand the law (even if ignorance is no excuse). And, even if individual bargains occurred, they are far too costly to reconstruct (under present modifications) to be of any use to the vast number of consumers with "small" losses.

Focusing directly on warranty law has thus, to some extent, mislead many attempts to deal with warranty problems. The real problem is risk distribution. Warranty

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[2]Either theoretically or in actual practice.

law is only a vehicle for distributing risk.[3] Improvements, therefore, can be generated through changes in warranty law and enforcement, or through more direct approaches to the risk distribution problem.

For example, if it is assumed that nothing is wrong with present warranty law, warranty problems would lie only in enforcement. Enforcement in turn can be improved through increasing the efficiency with which disputes are settled.

Efforts to increase efficiency have generated three basic arguments for reducing legal costs. First, class actions can be used to reduce "per unit" costs to individual consumers. Second, "free" lawyers, insurance adjustors, ombudsmen, or arbitrators could settle warranty disputes at no cost to the owner. Third, it may be reasoned that the threat value of either of the above reduces the total amount of disputes and the process becomes more efficient.

In the first instance, however, class actions run counter to the concept of warranty law. Individual expectations are difficult to generalize and apply to groups. Thus, group actions lack real meaning in the context of warranty law.[4]

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[3]Thus, warranty law as a vehicle for risk distribution has both a static and dynamic aspect as described in Chapter VII. In a static sense, risks are presumably allocated on a justifiable basis once they are present. In a dynamic sense, allocation of risks is made to reduce risks.

[4]There are additional practical difficulties. These difficulties were discussed in Chapter III.

The second argument, that of reducing costs to owners, represents a "subsidy." Just who would pay for ombudsmen or others varies among alternatives. In some suggestions, manufacturers or dealers would assume the costs. In others, an entire governmental funding program would be involved. But no matter who makes the first direct payments, it must be recognized that all consumers ultimately bear the costs. Reducing cost in this fashion is no real reduction but only a shift of costs to other consumers.[5]

The third argument, however, represents the real potential of law to solve warranty problems. If a reduction in disputes can be achieved by "threatening" those responsible, the size of the problem diminishes. This basic reasoning lies behind all law. Hence, very few laws are formulated with the intention of trying every case. Because warranties have legal status, it follows that the ultimate solution is legal sanction.

But are increased enforcement efforts the answer to warranty problems? Much of the present research suggests that they are not.

As Chapter V has suggested, a clear statement of legal responsibilities (provisions) may act to increase legal efficiency because it is far easier to enforce a clearly defined standard than one which is unclear. Hence,

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[5]However, where the costs are financed through tax dollars the shift of costs occurs to consumers who do not buy new cars.

rather than reconstruct an agreement which should have existed in express written form, it would be far more efficient to have the agreement clearly stated in the first place, particularly when legal efficiency is a barrier to settling small claims.

But as Chapter III has shown, court settlements, and basic provisions which evolve from the warranty process, actually define manufacturers' responsibilities. Yet these responsibilities are not clearly understood. Moreover, provisions which result from a modified "bargaining process" can take many different forms--all of which may be legal. That provisions may vary among manufacturers, or for the same manufacturer at different points in time, runs counter to the basic assumption underlying enforcement efforts to solve warranty problems.

Chapter VII has shown that various provisions may potentially deceive consumers and that several types of errors can be made in their construction. Moreover, Chapters V, VI, and VII have suggested that provisions affect the performance of an entire warranty system. Thus, where performance can be improved through provisions, the necessity for enforcement decreases.

The true potential of increased enforcement efforts must also be considered. As was previously mentioned, increased enforcement should attempt to reduce the number of disputes by threatening those responsible rather than by trying every individual case. As Chapter VII has shown,

however, disputes arise over product failures, not exclusively over defects. Thus, while the manufacturer may cause defects, consumers cause product wear. While the manufacturer should be responsible for the costs of defects, consumers should be responsible for the costs of product wear. Provisions which do not act to separate these forms of product failures, therefore, do not reduce the quantity of legitimate disputes--those disputes relating to defects. What is at issue is the adequacy of warranty law to clearly and correctly define provisions. But the problem is complex.

Chapter V has suggested that changing particular warranty provisions is not an option available to all manufacturers on an equal cost basis. Moreover, the chapter indicated that a manufacturer who, at a given point in time, has failed to compete effectively through other market actions, may choose to compete on the basis of a warranty. It also illustrated that cost advantages, which allow a firm to compete temporarily through warranty changes, are generated by virtue of ineffective competition by other means. Thus, being able to change warranty provisions at different points in time potentially yields anti-competitive behavior.

Because of costs and performance of warranty systems, it was concluded in Chapter VI that consumers have no objective criteria for evaluating warranties. This finding, coupled with the basic process of warranty law, leads to

the conclusion that present warranty law offers no assurance that consumers are, or will be, adequately protected from the risks of product defects. Thus, while one may reach the conclusion that, at a given point in time, a particular set of provisions are adequate, there is no assurance that they will not be changed.

As a result of past changes in warranty provisions, and the importance of the provisions themselves, many suggestions have focused on writing provisions into law. But as Chapter III has shown, direct enactments of provisions involves a basic contradiction of warranty law. Thus, for government to require certain provisions means a rejection of the concept of a "bargaining process." Moreover, a set of provisions thus enacted would not be a warranty.

In broader terms, legally requiring provisions implies a rejection of the marketplace's ability to distribute risks properly. Thus, to conclude that certain provisions must be required, suggests that neither warranty law nor consumer purchase decisions result in acceptable risk distribution procedures. This is a major conclusion of the present research. In other words, risk distribution procedures can be improved through direct and unchanging statements of provisions, not through modifications in warranty law or its enforcement.

But stipulating a set of provisions, or directly defining manufacturers' legal responsibilities for defects must be done with the recognition that risks are being

distributed on behalf of all consumers. While Chapter VII has suggested how and why certain provisions should be set for new automobiles, it is appropriate to view these suggestions from a broader perspective.

Suggestions designed to protect consumers from the risks of product defects must recognize the costs of protection and consumers' utilities for risks. There are always risks that a particular new product will be defective. Moreover, individual consumers may have widely different criteria for the amount of risks that they are willing to assume. Realistically, however, any given consumer does not have to buy a new car. This is a critical point since risk reduction occurs at a cost.

There are slightly over one hundred million vehicles in operation within the United States. Most owners operate a vehicle without the benefit of a warranty. In addition, a vast network of rental cars also exist. Thus, if a consumer feels that the risks of product failure on a new car are too great, he can rent a car. He can also join the millions of other consumers who own used cars.[6] The choice between new car, used car, or rental car has an obvious impact on both the amount of risks present and costs to the individual.

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[6]This discussion assumes that the risks of product defects are higher among used cars. This may not be the case. But, if risks are lower, individual consumers can then solve their new car problems by buying used cars.

For a used car, the consumer can trade initial purchase price against repair costs. For a rental car, the consumer can trade rental fees against reductions in product failure risks. Hence, upper and lower bounds for costs and risks occur in today's marketplace. This is of critical importance for public policy.

Consider, for example, a public policy that would require manufacturers to cover all repairs on a new car for a period of three years. Also, consider the fact that many consumers presently finance a car over a period of three years. Very quickly the differences in risks between renting a car and owning a car begin to disappear for the individual. But, just as differences in risks disappear, so will the differences in costs!

It is always easy, as a matter of public policy, to suggest ways to "improve" warranty systems without regard to the costs of doing so. Should warranties be extended? Should manufacturers be required to pay dealers more for repairs? Should "special" courts be devised to handle warranty claims? Should manufacturers be required to fix the products themselves rather than dealers? Should national independent inspection stations be required to discover defects? Should manufacturers, in short, assume greater and greater amounts of risks of ownership? Insightful public policy must consider costs, the possible reaction of manufacturers to these costs, and the effect on other market systems.

Forcing manufacturers to assume greater proportions of risks increases the costs of warranty systems. Forcing manufacturers to institute greater controls over dealers also increases costs. But it must be recognized that defect risks do not automatically decrease. While manufacturers could balance warranty costs against quality control costs, defect reductions may not occur. Reductions in defects become extremely costly and some may be virtually impossible to stop at reasonable levels of costs. More importantly, various government actions may result in forcing manufacturers to assume the risks of product failures not due to defects.

Where manufacturers are forced to assume greater proportions of risks not due to defects,[7] the necessity for product repairs does not automatically decrease. It may, in fact, increase due to consumer tendencies to mistreat products when virtually all repairs are covered. Faced with increased costs that are beyond manufacturers' control, therefore, manufacturers may only rent cars rather than sell cars.

For the manufacturer, rental may have certain shortrun advantages. Rental would allow the manufacturer greater freedom in determining whether the product is in satisfactory condition and the need for repairs. Regular

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[7]The following discussion also has relevance to voluntary assumption of these risks. Hence, sales of "service contracts" is a means by which manufacturers have assumed these risks.

preventive maintenance could be more easily required as a condition of rental. And, many transaction costs could be avoided. But, the long run effects may be much more important to manufacturers or public policy makers.

First, rentals (and service contracts, and extended warranties) imply that repairs are made by institutions selected by the manufacturer. The automobile repair industry, however, is presently characterized by independent repair shops, franchised repair outlets, gasoline stations, car dealers, and individual owners. To the extent that manufacturers' assume greater control over all kinds of repairs, competition at the retail repair level is reduced.

Second, many repair institutions buy parts from independent manufacturers. In a fashion similar to the above, independent parts manufacturers may also be at a competitive disadvantage.

Third, rental may allow the manufacturer to assume control of automobile insurance along with risks of product failures.

Fourth, one can only guess the effects of rentals relative to anti-trust law. Much of case precedent and economic theory does not apply well to products which are not sold.

Fifth, present warranty law finds its application in the sales of products. Where products are rented the

application of the law to physical injuries and other types of losses is questionable.

Sixth, renting new cars also implies a more direct control by manufacturers over the total supply of automobiles.

The potential for the above developments are critical to public policy and risk distribution. To the extent that greater risks are assumed by manufacturers under extended warranties, service contracts, or rentals, higher product prices will result in the short-run. "Pooling" individual risks for regular product service repairs is accomplished by either of the above activities. But "pooling" risks does not mean that consumers do not pay for repairs. Certain individuals may, in fact, pay disproportionately more based on either their utility for risk and/or the care they give their products. Whether the costs are worth the reductions in risks to the individual is the critical question.

Thus far, a great deal of consumer protection has been predicated on the assumption that the reductions in risks are worth the higher cost. This basic philosophy underlies the concept of minimum warranty provisions sometimes suggested. Hence, this research has suggested that certain risks for specified time periods should be shifted to businesses.

This research also suggests, however, that there are errors in both directions. Hence, it may be worthwhile

to think in terms of "maximum warranty provisions" as well. Businesses can be forced to assume too many risks. Or, perhaps businesses facing increased costs will choose to assume more risks than are desirable. Thus, it is possible to spend more (in terms of business costs, court costs, or damage to competitive environments) than the risk reduction is worth.

This dissertation has, therefore, presented automobile manufacturers' legal responsibilities, in terms of provisions, with the intention of controlling both kinds of errors. Yet, an underlying consideration in offering any set of suggestions for improvement is the feasibility of enacting suggestions.

One prime reason for focusing on provisions is that they can be adopted by either of two means--through Federal Trade Commission rulings or by acceptance of firms in the industry. Realistically it may be far easier to deal with provisions than to change warranty law. Moreover, the results are far more certain.

A second reason for focusing on provisions, and their enactment, is that manufacturer's responsibilities cannot be generalized well. Indeed, one of the difficulties of warranty law is that it attempts to potentially apply to all products, all sellers, all channels, and all losses. The provisions presented here do not.

For example, it may not be necessary to have products repaired at particular dealer locations. One

manufacturer of stereo components conducts sales by mail order through dealers. In the event of a defect, however, he supplies the owner packaging materials at no cost and pays for transportation costs both ways. But for a washing machine, it makes sense to complete repairs in the owner's home.

Similarly, it may not be necessary to require the same amounts of time or use for all products, depending on the product's physical character and consumer use patterns. Obviously, the parts covered and conditions will vary from product to product. For each provision, however, this dissertation has supplied a framework under which each one can be evaluated.

Another reason for focusing on provisions relates to the total analysis presented in this dissertation. Firms' responsibilities must be judged in perspective with a basic orientation toward consumers. This basic orientation lies at the foundation of much of marketing theory and practice. Perhaps one of the greatest needs of law today is a need to become more market oriented.

Much of our law is based on adversary proceedings and the need for individual justice in specific instances. But developments such as "no-fault" insurance raise the question whether individual justice could perhaps be better served by other means when the costs of determining "right" in given instances rise to high. Moreover, ecological problems suggest that perhaps there is no singular,

identifiable "adversary," but rather a problem in need of solution from many members of society.

In a similar fashion, the question of firms' responsibilities to consumers requires that definitions and legal sanctions be oriented toward the interests of all consumers, and in so doing, serve the interests of individuals as well.

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