

THE PROCESS OF CHANGE IN THE SOCIAL SYSTEM
OF A LARGE, COMPLEX CORPORATION

Thesis for the Degree of D. B. A.
MICHIGAN STATE UNIVERSITY
George D. Downing
1964

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thesis entitled

THE PROCESS OF CHANGE IN THE SOCIAL SYSTEM
OF A LARGE COMPLEX CORPORATION

presented by

George D. Downing

has been accepted towards fulfillment
of the requirements for

D.B.A. degree in Business Administration

W. Lloyd Wacker
Major professor

Date November 5, 1964

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ABSTRACT

THE PROCESS OF CHANGE IN THE SOCIAL SYSTEM OF A LARGE, COMPLEX CORPORATION

by George D. Downing

This thesis is a case study of the process of change in a highly market-oriented business enterprise, the General Electric Company. It is based on the premise that to remain viable, the modern business enterprise must adjust to its changing external environments--and particularly to the exponentially changing technological environment.

To do this, the enterprise must itself create new technology, or absorb and adopt new technology created externally, and develop new processes, procedures, and strategic action-programs. It is hypothesized that such new technology and innovative programs can be absorbed by the existing organization structure only up to some point, after which organization structure itself must be changed to accommodate additional absorption of new technology. But, it is proposed, formal management organization structure changes do not occur in isolation. All other elements in the total social system of the enterprise undergo concomitant, reactive changes. The forces of new, rational technology interact with the ongoing, symbolically reinforced traditions of the social or moral order of the social

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system, each adjusting to the other, in a moving equilibrium, sometimes easily and adaptively, sometimes with difficulty and disfunctional conflict. It is further hypothesized that identification and analysis of the symbol systems providing commonly shared meanings and sentiments permit explanation and prediction of the degree, duration, and parochial location of intergroup, interpersonal, and intrapersonal conflict.

The thesis presents the history of formal organization change from the formation of the corporation in 1892 through the great decentralization of the 1950's. Against this structural change, it describes changes in other social system variables, and the symbolic meaning of these changes affecting managerial behavior patterns. Particular attention is focused on two large organizationally independent, but interdependent and interacting components of the company--one of which was changed structurally and adapted readily to new ideology and programs, the other of which was left unchanged structurally and resisted emergent change.

From a social system analysis of the ensuing conflict, a number of abstractions are drawn, which appear to validate the working hypothesis of the thesis. Further, it is contended that current organization theories can explain some, but not all of what happened in this company, and do not provide the predictive ability of contemporary social system theory.

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THE PROCESS OF CHANGE IN THE
SOCIAL SYSTEM OF A LARGE,
COMPLEX CORPORATION

By

George D. Downing

A THESIS

Submitted to
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in partial fulfillment of the requirements
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College of Business Administration

1964

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ACKNOWLEDGMENTS

The author expresses deep gratitude to his many General Electric friends who exhibited interest in this study, and who contributed so freely and intimately their own observations and experiences in this great company.

Further, he extends heart felt thanks to his thesis committee, and particularly to Professor W. Lloyd Warner, who for three years guided him into new avenues of thought and analysis.

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CHAPTER I

INTRODUCTION

This thesis is a case study of the structural changes in the management of the General Electric Company from 1892 to 1960, of the forces underlying these changes, and of the resultant changes both intentional and unintentional in the total social structure of the company beyond the formal organization changes themselves. It will describe the history of change along several dimensions--management organization structure; management ideology; market growth in size and diversity; physical growth in plant, products, output, and people, geographical dispersion. It will interrelate these dimensions in an heuristic attempt to better understand the process of change in the modern complex corporation, just as the greater society within which it exists as a system is, itself, in the process of emergent change.

A major focus of the study centers on two large components of the company, separately organized but interdependent and interacting--one of which was formally restructured on a highly rational basis, the other of which retained (for marketing reasons) its "old," highly

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traditionally oriented structure. The study will document the changing relations between these components resulting in intergroup and interpersonal conflict, and the ensuing process of ultimate structural change.

From all this, the thesis will abstract generalizations tending to support hypotheses, to be presented later, relative to the process of change in the corporation social system.

Basic Assumptions on the Nature of the Business Enterprise as a System

Every corporate business enterprise has a set of objectives.¹ They may be explicit or implicit, rationally based or traditionally based, definitive or amorphous. They may include with varying relative valence profitability, sales volume, market share, growth and expansion, product and service diversification, market diversification, corporate image, social contribution, employee and community relations, etc. But underlying all these objectives is the prime one, usually implicit, of sheer survival--perpetuity of the enterprise.

¹Although we take this as given, it is probably an oversimplification. See, for example, Herbert A. Simon's, "On the Concept of Organizational Goal," Administrative Science Quarterly (Volume 9, number 1, June, 1964), pp. 2-22, in which he proposes that a set of "constraints" rather than "goals" influence the decision-maker--and that only certain constraints, those that motivate the decision-maker to search for action (rather than test potential actions) are "goal-like" in character. Here, however, we merely propose that in a corporate organization, top-level executives do establish targets of achievement for the corporation as a whole.

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What are the dynamics behind the struggle for corporate existence which finds itself expressed in terms of greater profit, greater physical size, greater industry position? Consider the business enterprise which over time has succeeded in identifying a market to serve, in developing a line of products which provide want-satisfactions to purchasers or users, in establishing good service facilities in the eyes of users, and in fair pricing in the eyes of users. The enterprise will have secured for itself a share of the market, a niche, a "core" of customers who habitually do business with this enterprise. This "core market" of customers who consistently, or nearly so, patronize the enterprise may well be an adequate one insofar as a better-than-breakeven volume is concerned. The enterprise could be content with its profit to sales and investment from such a market.

The enterprise has competitors whose market offerings are substitutable. Each competitor, too, develops a "core market" of loyal customers, and it is conceivable each enterprise in the industry could be content with its market achievement.

To be sure, there are purchasers who are indifferent as to supplier, and who purchase from any of several enterprises in the industry, for a number of reasons. Hence, each enterprise has a core of its "own customers" augmented by some share of the "indifferent" purchasers.

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Note that we are assuming substitutability of products and services, as perceived by customers.

What upsets this status quo? The executives of some one enterprise consciously or unconsciously begin to fear that if there were any erosion of the core market, the enterprise would experience difficulty in surviving. Or, as some students of the psychodynamics of the executive propose, the psychological drive for achievement may influence the executive to become dissatisfied with the status quo. Or, as will be discussed subsequently, the sheer weight of pyramiding technology outside the industry may upset the status quo, through no particular desire of the enterprises within the industry. In any case, the executives of some one enterprise will initiate actions to enlarge the core market--to reach out into the fringe, "indifferent" segments of the market and seek to envelop them into the core--ultimately, even to attack the core markets of competitors. This is the catalyst for innovation--innovation in many forms, technological innovation in new or redesigned product, technological innovation in manufacturing processes, innovation in marketing. This is the generating force behind new strategies, new programs.²

²Wroe Alderson, Marketing Behavior and Executive Action (Homewood, Illinois: Richard D. Irwin, 1957), proposes an ecological system analysis of the enterprise.

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Competitive enterprises perceive these innovations and new strategies and performance react to them. Hence, intra-industry competitive forces develop and grow, a set of dynamics well understood by economists--the seeking of differential advantage.³

But other and perhaps more important sets of forces are at play, impelling the enterprise to innovate technologically and to create new strategies and action-programs. There is some limit to intra-industry competition via innovation and strategy beyond which it is not economically or legally feasible to go. Hence, inter-industry competition develops which, with mushrooming technology, is accelerating rapidly. This is the aluminum industry invading the steel industry, the paper industry invading the glass container industry, the chemical industry invading almost everyone's industry. Again, this is a force requiring enterprises in an industry to themselves innovate, expand markets, diversify markets, create new markets, develop new strategies--or wane and die.

Other powerful forces are at work, prohibiting the enterprise to hold a status quo, if it is to remain viable. The American Society is changing, emerging into a new, greater society, bringing with it great social changes,

³Eward Chamberlin, The Theory of Monopolistic Competition (Cambridge: Harvard University Press, 1947).

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exerting forces changing consumer wants and demands. Economic forces, domestic and international political forces, the forces of large-scale labor unions, and legal forces are in flux. And perhaps most important (and perhaps least really understood) are the forces unleashed by the compounding technology, bringing to American business great new market opportunities to exploit, but also bringing unparalleled problems requiring technological, economic, and social adjustment.

This is the great complex, changing milieu in which the enterprise exists. To adjust to this changing external environment in its market places, the enterprise innovates technologically--either by creating new technology through its own research, or by uniquely adopting and adapting existing technology to its product or process developments. Additionally, it innovates in its marketing, creating new marketing strategies and programs. Such technological innovation and development of new repertoires of strategic programs may be accommodated within the existing structure of the enterprise.

The Problem of System Adjustment

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In either case--accommodation of new technology and strategies by an existing structure, or the development of new structure for their accommodation--the resultant programs are implemented by fallible human beings acting individually and in groups. The efficacy of planned change depends significantly on the behavior of individuals in the organization. What happens when changing structure changes the status system, the expectations, the roles of individuals? What happens when the common meanings attached by individuals to the many aspects of corporate life change? What happens when time-honored traditions, customs, and rituals are eliminated, or become meaningless in the new social system? How does all this affect patterns of managerial behavior? In what manner do individuals and groups adapt to new structure, new modes of behavior, new social relationships? Conversely, how are the new technologies and programs for which new structure is created assimilated by the new social system which emerges? What conflict arises, functional and dysfunctional, intergroup, interpersonal, and intrapersonal, and can such conflict be .

⁴This is a key proposition of this thesis. We state it as a "given" here, but shall present it in our theoretical framework section as a generally accepted proposition of sociology and social anthropology.

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The Research Hypothesis

To better understand the process of structural change in the large complex corporation and the effects (both planned and unplanned) of change on its efficiency and productivity, this study proposes a working hypothesis, to be tested by the evidence of the empirical research, and consisting of the following interrelated propositions:

1. The catalytic forces underlying the innovating of new technology have their roots in the corporation's markets.
2. As new technology is created and or absorbed, the corporation will initially accommodate it within its existing structure.
3. Continuing accommodation of new technology leads to increasing complexity of technical process and or product and engineered-system design and application; and/or product diversification; and/or market diversification. All this leads to

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4. New strategic programs (e.g., market action programs) to exploit the new technology will likewise initially be accommodated within the existing structure.
5. As new technology, new processes, and new strategic market programs are adopted, and as they are "tacked on" existing structure, the vertical, functional hierarchies of the organization will adjust them and adjust to them, and will grow in depth and breadth, hierarchially.
6. As this hierarchial growth increases, coordination between work-functions of the existing structure becomes more complex and difficult; as work centers get farther away organizationally and spatially from coordinating executives, executive control decreases and real power is diffused.
7. With lessening of executive control and with diffusion of power, the parochial work functions will continue up to some point to adopt new technology, but in a way unique to themselves. The new technology is adopted but is shaped, adapted, by them to their traditionally learned social organizations.

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8. The new technology will interact with the traditions of the social organization and thus is an input of social-organization change. However, the more traditionally oriented the beliefs or more commonly shared the "meanings" in the social organization and the stronger the valence of these beliefs and meanings, the less readily will the social organization adjust to new technology. Put in another way, the less readily will it accommodate new technology, after some point.
9. If, in a given corporation social system, strong, traditionally oriented beliefs "blunt" the absorption by the system of new technology and strategic programs, and if the executive perceives that the rate of absorption must be accelerated (for the organization to reach its rational goals), changes will be imposed on the system via organization structure changes.
10. But changes in organization structure do not occur in isolation; they echo throughout the social system, and all social structure elements of the system must adjust.
11. The more drastic and the more rational the imposed structure change (i.e., the more significantly changed the status system and

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expectation-sanction system, and the more rational and quantitative the change in performance measurements) the more readily will the other elements of the system adjust, i.e., social relations and modes of behavior.

12. On the other hand, if formal organization structure change is not imposed, but allowed to evolve as new technology is inputted, and the stronger the traditional base for social structure and the stronger the symbol-systems reinforcing shared sentiments, the greater will be the resistance to social system change, and hence the less the accommodation of new technology and strategic programs.
13. The stronger the traditions and symbol systems the greater will be anxiety, frustration, and conflict within the social system, when its individuals perceive imminent imposed structure of change.
14. Once structure change is imposed, the stronger the traditions and symbol-systems, the greater will be the lag in ultimate adjustment and equilibrium between all elements of the systems, and the longer and more dysfunctional will be the anxiety, frustration, and conflict.

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15. Once this equilibrium has been reached, however, and the greater the rational base of the "new" structure, the more readily will all elements of the social system adjust to additional further change.
16. If in the process of social change, time-honored symbol systems are threatened, altered, or destroyed, new symbol-systems must emerge to keep pace with the social system change, and behavioral adaptation to system changes will vary directly with the speed of evolution and strength of such new symbols.
17. If time-honored symbol systems are powerful and if they persist even though not "fitting" newly-evolving structure, they may cause an adjustment of the structure.
18. New technology and the social organization are always in interaction, each adjusting to the other and finding a moving equilibrium, a process which in itself is a prime ingredient of change. The efficiency and productivity of the organization is directly affected by the relative ease or difficulty by which this moving equilibrium is achieved.

The Theoretical Framework

The corporation is more than a technological and economic system. It is a social institution, and as any social institution possesses influencing, even coercive power over the behavior of individuals within it. This is more than formal management directives, job specifications, and the like. At the level of the individual, the individual perceives a web of phenomena which recur and persist, and which he translates as meanings for his behavior.⁵ At the level of the social institution, these recurring phenomena become commonly perceived by all individuals, and become a directive and constraining force on behavior. This is as true for the corporation as it is for the many other social institutions to which man belongs--his family, his church, his club.

The social phenomena peculiar to a particular social institution are not perceived in isolation by individuals but are perceived as interrelated. The patterns of behavioral response which evolve result from a complex of phenomena.⁶ To understand behavior patterns in any organized

⁵Here we follow Emile Durkheim. See particularly The Rules of Sociological Method (Chicago, Illinois: The Chicago University Press, 1938), p. 10, in which he bases his theoretical constructs and method on "social facts" defined as phenomena recognized by the coercive or constraining power they possess over the thinking and behavior of individuals and by the resistance with which they oppose every endeavor to change such power.

⁶E. Durkheim, The Elementary Forms of Religious Life (New York: Collier Books, 1961) proposes a meaningful connection between ritual and ceremonial life, metaphysical beliefs, and forms of social organization.

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social collectivity, therefore, we can not jerk out of total context any one phenomenon or set of phenomena, but must study it with relation to interrelated phenomena. The meaning to the individual of one set of phenomena (and influencing his behavior) is interconnected with the meaning of other sets of phenomena.⁷

This leads to the concept of the social system. Here we define "system" in its purest sense, as an organic or organized whole, consisting of an assemblage of elements united by some form of regular interaction or interdependence. Our theoretical concept of a social system will follow that of Radcliffe-Brown:⁸

1. If a suitably selected collection of individuals be examined, it is possible to discover by a study of their behavior certain social usages, or modes of behavior usual among the individuals in this collection, and distinguishing them from others.

⁷B. Malinowski, Argonauts of the Western Pacific (New York: E. P. Dutton, 1950). Malinowski found by intimate observation of the Trobriand Islanders' society that even such a clearly identifiable institution as trading goods was not merely a system of economic exchange but was only in part an economic activity, and involved the participants' minds, emotions, and feelings far beyond those related to the economic act. Similarly, in Crime and Custom in a Savage Society, he observed the linking, interrelation, and overlap of the economic system, kinship, sorcery, and crime. The customs and traditions regulating behavior, maintaining social stability, and providing common meanings thus evolve from a complex of interrelated phenomena.

⁸A. R. Radcliffe-Brown. A Natural Science of Society (Glencoe, Illinois: The Free Press, 1957), pp. 151-155.

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2. Whenever the actions of an individual are dependent upon the existence of some other individual or individuals, social relations exist.
3. Social structure is the totality in this collection of individuals, of all social relations recognized in and by social usage.
4. A social system, therefore, can be distinguished by (a) the social structure, (b) the totality of all social usages, and (c) the special modes of thinking and feeling which can be inferred from behavior and speech, and which can be related with the social usages and social relations making up the structure.

This is the theoretical base. Beyond this, gaining complete knowledge of a single social system (which will provide description, explanation, and prediction) requires:

1. Knowledge of its form, i.e., of the parts or elements of which it is composed, and the relation of those parts within the whole.
2. Knowledge of its functioning, i.e., what it does or how it works, and what is the function of each part in relation to the functioning of the whole.⁹
3. Knowledge of its derivation, i.e., of the process by which it came into existence.¹⁰
4. Knowledge of its potentialities for future development.¹¹

⁹Note that Malinowski centered almost entirely on this one step, and generalized from it, only.

¹⁰Note that here, Radcliffe-Brown uses history as a tool, to determine origins.

¹¹Note here the dynamics, i.e., the seeking of understanding of the process of change.

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Both dynamics and statics enter into the understanding of a social system in that both diachronic and synchronic problems and investigations are involved. Diachronic problems are those relating to how social systems change or develop (dynamics) synchronic problems are those concerned with the functioning of a social system as it exists at a particular moment of time irrespective of its past or future development (statics).

This study centers on the process of change in a corporate social system and therefore requires an additional theoretical construct, for which we turn to W. Lloyd Warner.¹² It includes the following propositions:

¹²W. Lloyd Warner, The Corporation in the Emergent American Society (New York: Harper and Brothers, 1962). Warner particularly focuses on the process of change of society. Structure, functioning, and derivation are important to him, but the elements or ingredients and their interaction within the social system which result in its continual becoming, or emerging into something which it is not now, is the main thrust of his theory. He postulates that the American society is emergent; that is, its nature is such that change is built into it and is an essential part of it, and that to be what it is at any one moment in time, the society must continually change and become something else. This process of change is such that "while the forms of the past are being absorbed in the present and losing their identities, the present ones, re-formed by the future, are becoming something different from what they now are."

Warner's theories encompass not only the greater American society, but also, to understand it and what it is coming to be, postulate about the several identifiable social systems making up the greater society--particularly the emergence of such large-scale complex organizations as big corporations, big governments, big unions, big churches, big associations. Each of these large organizations faces the problem of relating to the larger society, as they grow in hierarchial structure, spreading throughout the national society.

1. Men live in several environments, and their societies are mechanisms enabling man's adjustment to these environments. Three kinds of environment exist: (a) the natural or physical environment surrounding them, (b) the environment of their own human species, and (c) the super-natural environment which all men believe exists. Social systems develop sub-systems which control and regulate these environments. The technological sub-system consists of a rational body of technical knowledge and skills. The moral sub-system is composed of basic rules of behavior, principles, and value concepts which regulate behavior, and which are perceptually diffused by systems of symbols. The third sub-system is composed of sacred beliefs and symbolic rites.

All these sub-systems are interactive and are mutually dependent on one another. Changes in one are reflected by adjusting or reactive changes in the other. Therefore, three types of social adaptation result, each with its own sets of beliefs and values.

2. The process of change is an integral part of the social system. Each part of it, each of the technological, moral, and sacred orders has something coming into being, and the society itself can not persist unless it accommodates these changes, and itself emerges into something it is not now.
3. Growing technology has change built into itself, producing new culture. Individuals can not therefore stop learning; to maintain adaptation to the real world, they must continually learn to relate to a physical reality which is continually becoming something new.
4. As it develops, the society is becoming increasingly complex and heterogeneous, in spite of the force of tradition and custom tending to retain its degree of homogeneity. The sub-parts of the society are becoming more specialized and diversified, and hence require more coordination. Thus more coordinating statuses are required.
5. In turn, the requirements of coordination and control over the technological and the species environment place more power in the hands of individuals whose status gives them such control. Such power must be institutionalized and regulated by the moral system.

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6. The velocity of change is increasing. The very fact that change occurs (in each sub-system and in the relations between) seems to increase the potential of the society for even more change.
7. As change occurs in the technological sub-system, the moral sub-system with its body of customs, traditions, beliefs, and sentiments tends to blunt it, or hold it back. But in the process, new social usages evolve and old ones reform. Each sub-system adjusts to the other, finding a new equilibrium--but a continually moving equilibrium.
8. Underlying the above process are symbols,¹³ providing meanings. As new equilibria between changing technology and the adapting but resisting moral order evolve, new and specialized symbols and systems of symbols come into being. A complex society must have a common core of basic understanding understood by everyone. Hence, the social adaptation (the moving equilibrium) must be accommodated by changes in symbolic meanings. As the society becomes more complex, more diversified, and more heterogeneous, its symbols must keep pace.
9. The large-scale complex organizations in the society (economic, political, ecclesiastical, and academic) must relate themselves to the larger society which is itself in the process of change. Any one such organization may perceive the radical changes in another require that it, too, must change radically, a change which may not have been demanded without such perception. As the large-scale organization increases in size and complexity, it also expands in geographical space, and more and more communities and geographically separated people become involved in the development of these large organizations.

¹³W. Lloyd Warner, The Living and the Dead New York: Yale University Press, 1959), pp. 447-506, provides the theoretical base for our analysis of symbol systems.

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Organization Theories

Another proliferating body of knowledge exists pertaining somewhat more specifically to organization behavior--the various management and organization theories.¹⁴

Classical or traditional theory.--Springing from Frederick W. Taylor's "scientific management" concepts and also based on Max Weber's observations of bureaucracy, classical organization theory centers about groupings of individual tasks to be performed (to achieve rational objectives), the grouping of jobs into administrative units, the grouping of administrative units into larger units, or departments. From this, classical theory proposes "principles" of management--those of the planning, organizing, coordinating, and controlling functions of management.¹⁵

Neo-classical theory.--The "neo-classicists," however, propose that the individual in the organization is more than "instrumental" man, that he brings his whole

¹⁴W. G. Scott, "Organization Theory: An Overview and Appraisal," in Journal of the Academy of Management, Vol. 4, April, 1961, provides an excellent description of the several categories of contemporary organization theories.

¹⁵D. E. McFarland, Management Principles and Practices (New York: The Macmillan Company, 1964). McFarland goes beyond the classical "principles" of management, and relates revisionist theory, human relations theory, and quantitative decision-making theory into an integrated treatise. He does, however, present a clear description of the classical "principles."

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self to the job, with sentiments and emotions. Commonly referred to as the "human relations school" and based on Elton Mayo's famous Hawthorne studies, this behavioral-science oriented approach to organization theory considers human variables and their impact on organizational behavior, and the unanticipated consequences of such behavior. Theoretical elements include: theory related to motivations, coordination, and leadership; individual attitudes and motives; and the emergence of the informal organization (stemming from human associations in the work place, and not specified by the formal organization structure).¹⁶

Modern organization theory.--This is basically systems theory, viewing the organization as a complex of interdependent, interacting and variable parts. As a social system theory, it overlaps, of course, with the neo-classicist theories. But in some senses, it is being pushed (or attempts are being made to push it) beyond merely the social system. Modern organization seeks answers to a number of interrelated questions which are not considered in classical or neo-classical theory:

(1) What are the strategic parts of the system, (2) what

¹⁶The literature of the human relations "school" is profuse. See particularly, Gardner and Moore, Human Relations in Industry (Homewood, Illinois: R. D. Irwin, 1955); Keith Davis, Human Relations at Work (New York: McGraw-Hill, 1964).

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is the nature of their mutual dependency, (3) what are the main processes linking the parts together, and facilitating their adjustment to each other, and (4) what are the goals sought by systems?

Modern organization theory is conceptual and analytical it relies on empirical research; it is integrating in character. It does consider the individual and his personality structure;¹⁷ it studies the formal organization, and it factors in the informal organization.¹⁸ It attempts to interrelate the interacting parts of the system in terms of role theory, communication processes, and decision-making processes. It introduces mathematical concepts and models. It attempts to strike at the balancing or equilibrium-process via cybernetics, applying the feedback, control, and regulation devices of the technical or engineered system.

Knowledge of General Electric

Coming to a more specific plane, a body of knowledge exists about the business enterprise under study, in two

¹⁷Typified by C. Argyris, Personality and Organization (New York: John Wiley, 1958). Argyris, of course, is noted for his consideration of conflict. Many psychologists are theorizing about individual human behavior and individual adjustment processes in the business organization context. See also George C. Homans, The Human Group (New York: Harcourt, Brace, 1953).

¹⁸J. C. March and H. A. Simon, Organizations (New York: John Wiley, 1958).

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categories--(1) public knowledge, including press and trade articles, books and documents written by executives, financial reports by stock brokerages, etc., the annual reports, and books written by "outsiders" about the company or its executives; and (2) internal documents prepared for use of company personnel only, and the history, lore, and myth carried in the minds of individual members or former members of the company.

A documented history of the company from its formation in 1892 to the present day is non-existent, either for public or private use. This writer spent a full day in the company's library, aided by company librarians, and found only smatterings of history in a wide variety of internal publications. From these, the history of organization structure change can be accurately reconstructed. One written "history" does exist,¹⁹ covering the period 1892-1939, but it is an impressionistic and idealistic account. One era is well documented insofar as the executive philosophy is concerned by an excellent biography of President Gerard Swope.²⁰ Another era of

¹⁹J. W. Hammond, Men and Volts (New York: A. B. Lippincott, 1941).

²⁰David Loth, Swope of G. E. (New York: Simon and Schuster, 1958).

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executive philosophy, that of President Cordiner, is also well documented by his own book.²¹ Perhaps the most meaningful documentation from which generalizations about the process of structural change can be drawn is that prepared for internal use in the "Advanced Management Course" and the "Professional Business Management" course, given to essentially all managerial personnel (including this writer) in the late 1950's.

Method

The empirical research presented in this study is compiled from three distinct bodies of evidence: (1) personal observation, (2) documents, both public and internal company, and (3) field interviewing.

Personal observation.--This writer was personally employed by General Electric from 1937 to 1960 (a period of twenty-three years), and served during the last fifteen years in a variety of management positions in the Apparatus Sales Division (an organization component later to be described). Entering the company near the end of Swope's regime, serving under Wilson's regime (with five years of military leave of absence during World War II), and serving under all but the last three years of Cordiner's regime, he

²¹R. J. Cordiner, New Frontiers for Professional Managers (New York: McGraw-Hill, 1956).

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personally observed the massive reorganization change ("decentralization") in the 1950's, and assisted at the field level in planning the implementation of some of these changes. As a staff manager in a large regional operation, he was specifically charged (among other things) with developing the new and changing relationships between the field sales operation and the newly forming decentralized product operations. He personally attended managerial training programs accompanying the organization changes, and personally conducted some in the field. He assisted in the implementation in the field not only of structural reorganization, but also of new salary and job description programs. To put this all in historical perspective, he wrote a "personal history" (not included in this thesis) of his career with the company.

Documentary evidence.--A wealth of documented bits of history exist regarding specific acts of the company. The business and trade press (including such newspapers as the New York Times) is a productive source of information reporting organization changes, technological advances, and occasionally the expressed philosophy of the executives. In large part, however, library research in these media merely validated or reinforced data and evidence already in this writer's possession.

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A richer source of documentary evidence comes from the company's internal publications of all sorts, explaining organization changes, stating objectives, describing new policies, procedures, and programs, etc. Much of such documentary evidence is in this writer's personal possession; some of it was loaned to him by management friends still in the company; some of it was recorded from a study of documents in the company library in 1962. Of particular value is a set of volumes written for use in the advanced management development programs in the late 1950's. Because such documents are company property, they will not be directly quoted or footnoted, but occasionally will be broadly referred to.

Field interviewing.--A third source of evidence comes from information given to this writer in 1962 by managerial individuals in the company. The company was first approached, at executive staff level, with a request to officially participate in this research. This request was considered for some time, but was finally declined. This required the field work to be narrowed to two major elements of the company--one producing and marketing, and the other selling capital "engineered," and industrial apparatus,²² where the writer had the access of

²²These two elements of the company account for roughly half the company's total sales--or about two billion dollars at the time of the field research.

friendship or prior business association. A judgment sample of forty managers was selected ranging in position from District Sales Manager to Group Vice President.²³

Individuals in the sample were interviewed informally, entirely on an open-end basis. They were told that the interview was to help in the writer's doctoral thesis on the process of organization change. The interviewees must be considered "informants" rather than "respondents." Each was promised anonymity.

Limitations of the Personal Observation

During his twenty-three years of observation of change in the company, this writer was not an objective observer, but was personally and emotionally involved. This introduces a bias which must be recognized. Even the interviews, conducted after he left the company, may have been biased, because he knew the informants personally. On the other hand, this bias may be outweighed by the fact that he knew what questions to ask, to get significant information; personal friendship with informants unquestionably stimulated them to respond in a way they would not have to a "stranger;" he knew the unwritten as well as the written history; he had shared traditional and symbolic experiences with respondents.

²³Salary range for the sample is estimated at approximately \$20,000 to over \$100,000. This is not particularly important, except to indicate the status-authority positions of individuals in the sample.

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Limitation of the field research.--The field research had to be limited to only a portion of the company, albeit a significant portion. This may cloud generalizations projected to the entire company. However, it may have been a blessing in disguise; the two organizational components studied present a marked contrast. One changed drastically in structure and in social system during decentralization; the other did not. But these two components were interdependent and interacting, and the process of changing relations between them, and the emerging of new structure is almost a laboratory situation.

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CHAPTER II

THE BROAD INDUSTRY BACKGROUND

Probably no single industry so vitally and dynamically effects the American economy and the welfare of the American society as does the electrical machinery industry. Born from the amalgam of technological inventiveness and entrepreneurial innovation, it has grown and is still growing by feeding upon the very technological innovation it creates. The industry has a history of vast proliferation. With its technological roots in the development of arc lighting and incandescent lighting in the late 1870's and 1880's and the power apparatus systems required to operate them¹--and with the marketing and financial innovations marshalled to finance, produce, and install lighting systems even before demand for them existed²--the electrical machinery industry has found its research, development, manufacture, and marketing contributions reaching into every segment of the economy and the society. Hardly a

¹Harold C. Passer, The Electrical Manufacturers, 1875-1900 (Cambridge: Harvard University Press, 1953), pp. 1-13.

²Edwin Vennard, The Electric Power Business (New York: McGraw-Hill, 1962), pp. 4-10.

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product exists today--consumer or capital--which does not owe its present utility directly or indirectly to the technological and marketing achievements of the electrical industry.

On the economic side, the electrical industry has permitted vast enlargement of productive capacity and output; it has directly influenced, more than any other factor, increased productivity per worker, increased national income, and increased employment--through its making possible the greater tool-power of the worker. Strictly in the economic sense, the electrical industry provides the productive life-blood of our complex industry-based economy.

On the social side, the contributions of the electrical industry are enormous. Higher living standards, reduction of drudgery in home and factory, convenience and comfort, increased leisure, and higher real incomes have been and are being made increasingly available to essentially all social and economic segments of the American society.³

Born and developed initially as the direct result of technological innovation, the electric machinery industry has continued to draw on new technologies. Research and development evolving new products and new engineered-systems

³Jules Backman, The Economics of the Electrical Machinery Industry (New York: New York University Press, 1962), pp. 308-318.

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is compounding. Ever-increasing innovations not only provide a widening array of consumer products (television, home laundry equipment, etc.) but also serve as the impetus and implementation of new engineered-product systems utilized by other industries in increasing their productivity, decreasing their costs, even making possible their own product innovation. The electrical industry has always been recognized as a leader in research; in 1940 the industry's investment of 4.85 per cent of sales in research was almost twice that of the next largest industry-contributor to research. By 1957, only the aircraft industry surpassed the electrical industry in actual dollars spent in research (a direct result of the space program); in that year, the aircraft industry expended 2.5 million dollars, the electrical machinery industry 1.2 million, surpassing all other industries by a wide margin. The electrical machinery industry was, in 1957, expending in research at twice the rate in dollars as the chemical industry, five times the rate of the petroleum industry, five times the rate of the telecommunications industry, ten times the rate of the primary metals industry. The significance of technological research in the electrical machinery industry is further emphasized by its employment of scientists and engineers; the National Science Foundation reported in 1959 that this industry employs one out of every eight of the 764,000 scientists and engineers in the

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country, for a total of 92,700--second only to the 94,900 employed by the aircraft industry.⁴ Further, no industry has such a diversification of research objectives and achievements, ranging from space and national defense, to the development of nuclear power, to industrial productivity, to the farm, to the home. Research--technological innovation--inventiveness--these have been and are the hallmarks of this industry, and have clearly established it as an institution, or collectivity of institutions with unparalleled economic and social significance for the society.

The electrical machinery industry is a complex of many related industries, all engaged in the manufacture of machinery, apparatus, and supplies for the generation, storage, transmission, transformation, and utilization of electrical energy--a wide variety of products ranging from multi-million dollar turbine-generators to lamp bulbs costing a few cents. The corporate make-up of the industry is diverse; at one end of the spectrum are many relatively small companies specializing in the manufacture of one or two products; at the other extreme are General Electric and Westinghouse, the two largest companies in the industry, participating in many, or most, phases of the industry.

⁴Ibid., pp. 185-190.

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Here, then, is a complex of corporate enterprises whose collective achievements in research and manufacturing and whose financial and marketing ingenuity has boundless impact on the American economy and society, and whose ever-compounding technology is providing new and forceful inputs into the changing world and changing lives of every individual in the society. One of the greatest of these enterprises, and a titan among all companies on any count, is the General Electric Company, the subject social-system of this study.

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CHAPTER III

GENERAL ELECTRIC'S EARLY BEGINNINGS--1892

The formation and the early development of the electrical industry is marked by three important facets of business enterprise which persist in the industry to this day--(1) technological invention, (2) entrepreneur ingenuity, and (3) marketing ingenuity. Springing from the laboratories of such scientist-inventors as Edison, Brush, Sprague, Thomson, and others, corporate enterprises were formed to market products for which no market then existed.

The development of electric powered arc lamps for street lighting provided the initial stimulus. The early inventor-entrepreneurs, however, had to do more than invent and develop the end product; concomitantly, power generating, regulating, and transmitting apparatus had to be developed, and an entire new capital market had to be created. The industry development, therefore, had three distinct but interdependent phases.

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It is a classic example of the integration of technological innovation, entrepreneurial foresight and skill, manufacturing techniques and marketing ingenuity.

Circa 1880, a number of companies had been formed and were pursuing different technological paths. The Brush Company was producing and selling direct current arc-lamp systems; the Thomson Houston Company was more or less in direct competition; the Edison Electric Light Comapny was further developing the incandescent lighting system invented by Edison.

A maze of patents developed, both contributing to and hampering individual companies' growths. Resultingly, according to most observers, mergers were enhanced.¹ The Thomson Houston Company purchased a number of small companies and the large Brush Company in 1889. Meanwhile, the Edison enterprise had likewise purchased a number of smaller companies, and had been reformed by 1889 into the Edison General Electric Company. These were the major companies at this time, with Thomson Houston largely specializing on arc-lamps, and Edison G. E. on incandescent

¹ Passer, op. cit., pp. 352-353.

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lighting. Both had begun to diversify into industrial power applications, particularly in the railway field. Both were committed to the use of direct-current power.

Meanwhile, in 1886, George Westinghouse had formed the Westinghouse Electric Corporation as an outgrowth of his Union Switch and Signal Company which had served the railroad market--notably with Westinghouse's invention of the air brake. Westinghouse entered the electrical market promoting alternating-current power--which ultimately extended the use of electric power into homes and factories by permitting transmission of power over relatively long distances.

Mergers and consolidations continued in the 1890's. The two major competitors, Thomson-Houston and Edison General Electric merged in 1892, to form the General Electric Company. Executive management was vested in Charles Coffin, the entrepreneurial genius whose financial, organizational, and marketing expertise had guided Thomson Houston in the ten years of its life to a sizable corporation, by the standards of the era. Again, the newly formed General Electric Company was a balanced amalgam of entrepreneurial talent and technological ability.²

²John W. Hammond, Men and Volts, The Story of General Electric (New York: Lippincott, 1941), pp. 191-212.

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Historians agree that this merger, too, resulted from the complexities of interlocking patents, the heavy financial problems of license fees, and the difficulty of securing new capital.³

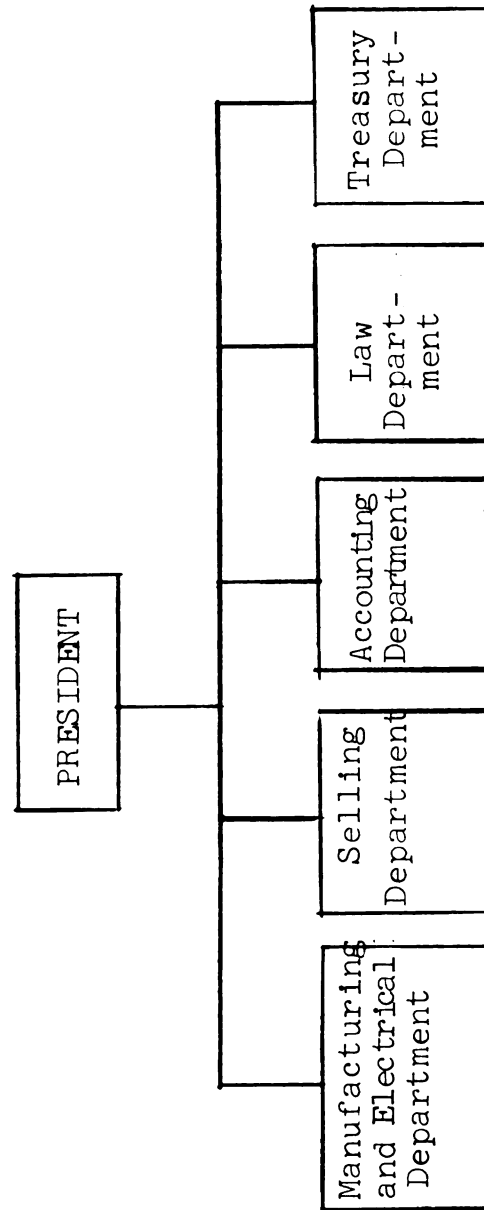
At the very outset, General Electric faced organizational problems, never to end as the company prospered and grew. The competing companies' management required melding, and reorganization of the duplicate manufacturing facilities was required. The new company had a simple centralized organization structure consisting of five centralized operating and staff departments: Manufacturing and Electrical, Selling, Accounting, Treasury, and Law Departments.

The initial organization structure, shown in Figure 1 below, and also on Chart 1, Appendix I, was a simple line and Staff, centralized structure:

³Backman, op. cit., p. 106; Passer, op. cit., pp. 324-326.

Figure 1.--Initial Organization Structure, 1863.

Figure 1.--Initial Organization Structure, 1892.



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CHAPTER IV

THE PERIOD OF CONSOLIDATION AND GROWTH

1892-1922

The Charles Coffin Era

The 1893 depression burst upon the young General Electric before it had become a smoothly running, efficient organization. The panic, however, served to accelerate organization adjustment, and by no means dampened entrepreneurial enthusiasm. Both General Electric and Westinghouse used this period for consolidating merged manufacturing facilities and for planning for growth. Particularly important was the bringing of the district sales offices (which had been operating under almost complete autonomy) under the centralized direction of the headquarters Selling Department (the forerunner of the Apparatus Sales Division which will be described in detail in subsequent chapters).

Nonetheless, the financial situation in 1893 was desperate. The predecessor companies had each helped market demand growth by variously assisting local power and light customers to finance their new enterprises. Frequently, the manufacturers accepted securities in the local power

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companies, and also frequently endorsed the customers' bank loans which in turn were offered in part payment for apparatus. There is some doubt that the electrical industry ever could have come into being had the predecessor companies not engaged in this innovative marketing strategy. But in the 1893 depression, General Electric as endorser of such loans became liable, as many of the local power companies were unable to meet the demands of their banks. Liquidation at substantial loss of stocks and bonds held in the power companies, with approval of New York bankers on G. E.'s Board (including, incidentally, J. P. Morgan) at thirty-three and a third cents on the dollar, pulled the young company through its perilous first year.¹

By mid 1894, business began to improve and G. E. began a long period of growth, stimulated by a proliferation of technological innovations. Untold credit for this is due to one of the great geniuses of the age--Charles P. Steinmetz. Steinmetz had come to G. E. via the Eickemeyer Company, which G. E. purchased in 1892, and by 1894 was "Head Engineer" in Schenectady. Steinmetz' mathematical genius overcame many of the obstacles in the use of alternating current and enabled the growing company to progress

¹Hammond, op. cit., pp. 220-226.

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The necessity of training of young engineers was recognized even in these early days,² and Steinmetz, as "Head Engineer" personally instructed classes in mathematics applied to electrical equipment design-- the forerunner of a vast family of training programs for which General Electric later became famous throughout industry (to be detailed later).

Many individual scientists and inventors of the predecessor companies remained in the company, including Brush, Thomson, and Van Depoele (Edison himself had left active service), and hence the aura of research and development persisted. Steinmetz was conducting formal research in his barn; and engineering department was established in 1899 with a Technical Director. In 1900, however, the research activity was formalized, with Willis Whitney as its first director, dividing his time between the new General Electric Research Laboratory and professional duties at the Massachusetts Institute of Technology. It was the first laboratory to be established in industry for the purpose of fundamental research--the few others having been confined to product development and manufacturing

²Ibid., p. 230.

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Meanwhile, product and market development in the incandescent lamp business proceeded apace. Manufacturing techniques were improved; automatic lamp making machinery was developed (outside G. E., and rights to which were purchased by G. E. in 1917). On the market side, many small lamp competitors of G. E. "consolidated" into the National Electric Lamp Association, a collectivity of relatively independently operated small "divisions" headquartered in Cleveland. To all apparent extent, this collectivity competed with G. E.'s Edison Lamp Works--but it was financed by G. E.³ In 1911, the United States Government instituted an anti-trust suit against G. E. and thirty-three of the "association" companies; G. E. submitted to a decree; the National Electric Lamp Association was ordered dissolved. Even before the decree was issued, G. E. had exercised its option of purchasing all stock in the association and had become its sole owner. The association headquarters became known as "Nela," coined from the initials of the association; the affiliated lamp companies were merged into G. E. Thus came into being "Nela Park," the familiar and famous home of G. E.'s Lamp Division of today.⁴

³Ibid., pp. 300-301.

⁴Ibid., pp. 340-344.

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The young electrical industry was rapidly expanding into the fields of power machinery, developing applications in rail transportation (locomotives and street railway) and in industrial usages (steel mill motors, etc.). Important inventions by G. E.'s Alexanderson and Langmuir in the field of radio transmission put G. E. squarely in radio research and development as early as 1906. By 1919, when these G. E. scientists had developed transmitting equipment capable of trans-oceanic transmission, G. E. was considering the sale of such equipment to the British Marconi Company. The United States Government appealed to G. E. in 1919 to refrain from selling to the British company; G. E. then itself entered the telecommunication industry by purchasing the American Marconi Company and establishing a new company to serve as selling agent for G. E.'s radio products, under the name of Radio Corporation of America. (By Federal Court decree in 1933, the common stock in RCA which was held by G. D. was distributed to G. E. stockholders as a dividend.)⁵

In 1913, Charles Coffin, having served twenty-one years as President and Chairman of the Board, relinquished his duties as President. E. W. Rice, who had entered Thomson-Houston thirty years earlier as a clerk-assistant, was named

⁵Ibid., pp. 376-424.

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President. Coffin nonetheless apparently did not relinquish his "keen supervision over (the company's) affairs."⁶

Nine years later, in 1922, Coffin and Rice retired, and the new executive team of Gerard Swope (President and Chief Executive) and Owen D. Young (Chairman of the Board) took command of the company's destiny.

As the first executive generation left the active scene, it could look back upon remarkable growth in size, sales volume, diversification of product, entry into new domestic and foreign markets, and continuing expanding technology. As the historian Hammond proclaims somewhat poetically, "General Electric (in 1922) was more than a manufacturing concern. It was an institution of science and engineering, of vocational training and of character building, an institution of wide social and economic influence."⁷

It was that, as subsequent chapters will amplify. But there is no question about the successful growth of G. E. in its first thirty years. But despite growth in many dimensions, the formal organization structure remained unchanged. By 1922, it was still basically a simple line and staff centralized structure. Of course, there were some changes and additions; the "manufacturing and electrical

⁶Ibid., p. 349.

⁷Ibid.

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Regrouping the above components as staff and operating functions, the formal organization structure at about 1910 appeared as in Figure 2, page 45.

This organization structurally is unchanged from that of 1892.

A modicum of decentralization was accomplished by separating the lamp business from the above structure around 1910. But this was probably an accident due to government action.⁸ As noted above, governmental action precipitated dissolution of the National Electric Lamp Association, and G. E. Formally assumed operation of this group of engineering, manufacturing, and sales functions.

But while formal organization structure remained basically unchanged and the executive organization philosophy remained unchanged throughout the Coffin era (1892-1922) great changes had occurred in other dimensions.

Although by 1920, the company's manufacturing facilities had not dispersed geographically to any major extent, centering mainly in the northeastern quadrant of the country, the number of plants had multiplied over thirteen-fold, from four in 1892 to fifty-four in 1920 (Chart 2, Appendix I).

⁸Note that this is the writer's conjecture.

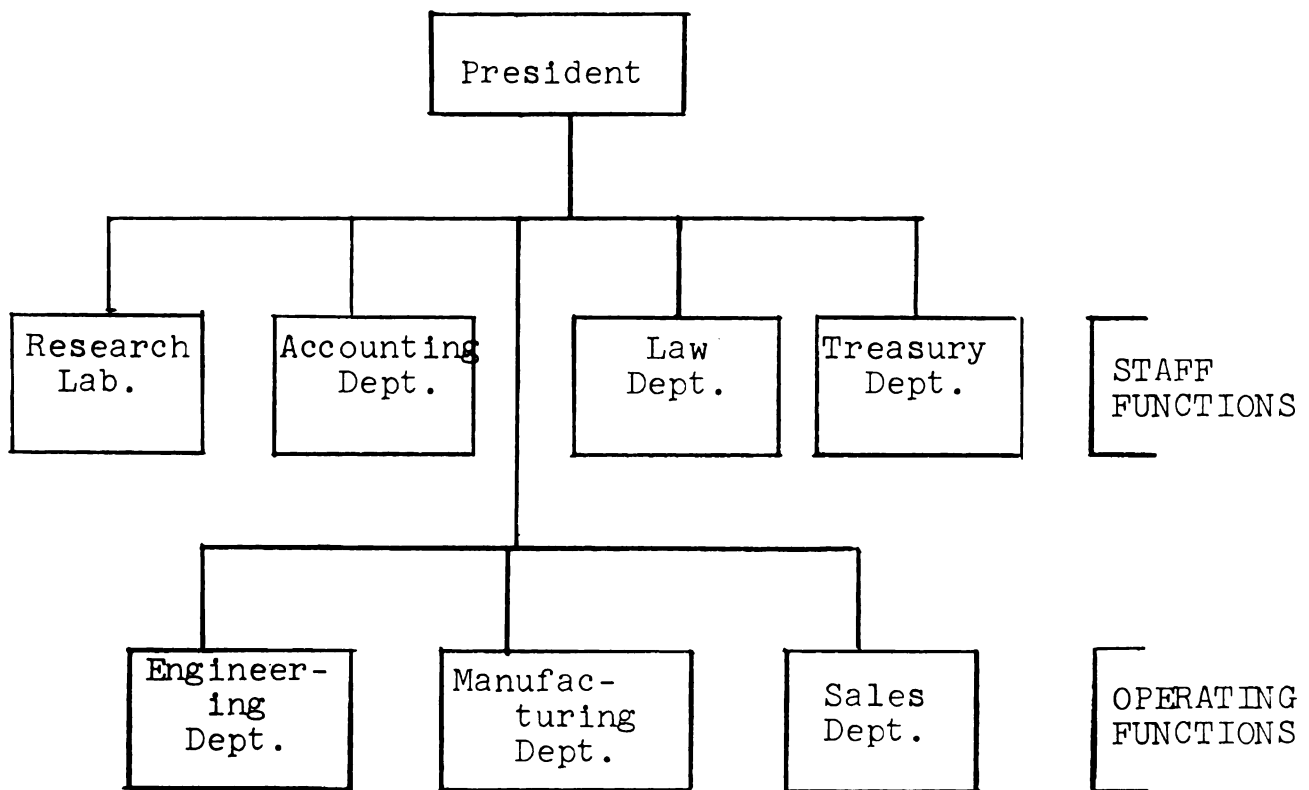


Figure 2.--Formal Organization Structure, Circa 1910.

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Equally dramatic is the company's growth in the dimensions recorded in Chart 3, Appendix I. Sales increased from eleven million to 276 million dollars; employees from ten thousand to eighty-two thousand; stock owners from three thousand to seventeen thousand; number of product lines⁹ from five to eighty-five. Of particular interest is the last datum; the increase in product lines during this period was due to increasing technological innovation and the aggressive creation of new markets-- in this period, capital-goods markets for engineered products.

Note that this great growth was accommodated by the existing formal organization structural form. As new products were developed, and new markets created and exploited, the new engineering, manufacturing, and sales facilities were "hung on" the existing structure. We have no way to evaluate the productive efficiency of the company in this period of great growth, but certainly facilities of capital and labor, and output were increasing sharply. We assume, therefore, that the growing technological and economic sub-systems were able to grow within a relatively constant social-structure system.

⁹The term "product line" throughout this study is defined as a compatible group or "family" of products grouped together on one accounting basis. A "product line" will include a number of different individual products. For example, the "product line" distribution transformers (included as one product line in Chart 3) may include a hundred or more different models, or types.

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Thus, after thirty years under the executive leadership of Coffin, General Electric was ensconced as a large, highly technically oriented, innovative, and prosperous business enterprise, with basically the same organization structural form.

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CHAPTER V

PERIOD OF CENTRALIZED FUNCTIONAL ORGANIZATION, 1922-1940

The Gerard Swope Era

With the election of Gerard Swope¹ as President and Chief Executive Officer in 1922, General Electric passed from its pioneer period, and entered a period of growing industrial maturity. This was to be more than merely physical growth in physical size, sales volume, and diversification of product. Significantly, under Swope's leadership (and that of Owen D. Young, elected Chairman of the Board at the time of Swope's election as President), executive philosophy changed. General Electric came to be something more, in the eyes of its own management and later of the public, than a scientifically oriented manufacturing enterprise. The forces behind this changing philosophy and practice of executive of management and their impact on managerial ideology in the company will be described in later chapters. This chapter will describe Swope's

¹David Loth, Swope of G. E. (New York: Simon and Schuster, 1958), provides the source of much of the content of this chapter referring specifically to Gerard Swope.

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expressed philosophy, his actions as President, and the seeds of changing structure and activities of the company. To be sure, changing managerial philosophy and its impact on managerial ideology are variables beyond those of formal organization which are being described here. Strictly speaking, they belong in later chapters which deal with the changing moral order and the changing totality of social structure. But the changing philosophy of the new executive management was the genesis for formal organization structure change, which change did not culminate until the next executive generation. It was a significant input into the process of change, and, therefore, must be presented as a backdrop for the remaining discussion of the change of formal organization structure.

Swope was an organizer. After graduating from Massachusetts Institute of Technology in 1895, he was employed by Western Electric Company at which time that company manufactured not only communication equipment, but power apparatus as well, hence, competing with General Electric and Westinghouse. In the next twenty-four years, he was successively electrical engineer; salesman; sales manager; general manager of engineering, manufacturing, and sale of all machinery business (including the large Hawthorne Works), Vice President of International Western Electric.

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Threaded through all his experience at Western Electric was Swope's organizing and systematizing ability. He had reorganized Western Electric's selling operation, reorganized the Hawthorne Works, reorganized Western Electric's foreign operations--all with notable success. He was called upon for particularly difficult special assignments--negotiation of sale of Western Electric's machinery business to General Electric; reorganization of sales compensation plans; negotiation of purchase of patents essential to the automatic telephone.

General Electric hired him in 1919 as President of International General Electric. Here again, Swope embarked upon a vast program of reorganization, including the setting up of International General Electric for the first time as an autonomous operation.

Early in his career, Swope had formulated an approach to management which he called, "analyze--organize--deputize--supervise," a phrase to become widely echoed throughout General Electric management. Swope practiced his formula diligently--although some of his critics maintained that he did not practice the "deputize" element. Ample evidence exists that Swope was a dynamic, strong executive who made firm and prompt decisions and who held very close control.

Swope's election as President of General Electric was viewed with concern among the company's managerial rank and file. The company had a strong engineering and

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production orientation, and Swope was regarded as a "merchandiser." His record of reorganizing ability preceded him, and his appointment stirred no little alarm.

The reorganizing started at the top. The Board was reorganized, to reduce and ultimately eliminate membership by any General Electric executives other than the President and Chairman.

Swope's approach to executive management and his contribution to the changing orientation and activities of the corporation can be summed up in the following six broad categories.

Changing philosophy of executive responsibility.--

Swope viewed the corporation as a broader institution than merely a business enterprise. He felt, and his personal actions demonstrated, that an obligation was vested in the executive to enhance the security and the human rights of workers, management and labor alike. In this he laid no claim to humanitarianism; he stated publicly that this view was simply "good business." He overtly declared that the business executive must lead in the development of the social responsibility of the corporation. In this he was ahead of his time, and was viewed as "radical" by many of his executive peers.

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sub-management levels for greater managerial responsibility. As President, he instituted practices he had developed in Western Electric of holding "management seminars," in which groups of managers from diverse work functions were brought together to gain the "broad concept" of the objectives and problems of the entire enterprise. He initiated an "advisory committee" of twenty-one top executives of the corporation meeting monthly to discuss individual group and collective company problems. This did not mean he relinquished control; all lines of authority clearly focused to him. But it did cause a new awareness through the growing company of a sense of personification of the company.

He developed the formal practice of "spotting" talented young men; every manager down to the lowest supervisory level kept a "PYM" list of "promising young men," and passed this list upward through channels--a practice which remained in vogue until the 1940's. (Evaluation and rating systems will be described in detail later.)

He began the famous "Island Meetings." Some years before, and before its merger into G. E., the National Electric Lamp Association had purchased a small island in Lake Ontario, fitted it as a summer camp, and named it "Association Island." Here were held management meetings, unofficially referred to by managers as "adult education disguised as a picnic." Swope used the Island as a medium to further his objective of establishing management group

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meetings to view the company "as a whole." (Part III will describe in detail the function of and the meanings attached to "The Island.")

He instituted the "Elfun Society," a quasi-formal company-wide management group designed to encourage "extra curricular" attention to overall company problems. (This activity and its impact on managerial perceptions and behaviors will be detailed later.)

The building of company image.--Although by the early 1920's the company was well known in the industrial and financial communities, its name was little known in the public at large. Swope and Owen D. Young agreed early in their tenures as President and Chairman respectively that the name of G. E. should be promoted broadly. By mutual agreement, Young assumed the role of "public relations officer," and for years was to devote much time and effort to the development of a public awareness and favorable acceptance of G. E.

One of the first steps was to put the G. E. monogram on all electric lamps heretofore "branded" with a wide variety of names identifying the producing unit (National Lamp, Edison Lamp Works, etc.). The company had become unified internally. Now it began to present itself to the outer world in a "unified" sense. The G. E. monogram appeared on each of the millions of lamps, beginning about 1923.

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At the same time, and as the company began more broadly to enter the consumer-good market (discussed below), a well known advertising firm was retained to promote the name of G. E. The famous slogan, "More Goods for More People at Less Cost" was coined--a slogan to become identified with the name of G. E. throughout all sectors of the public.

As will be discussed in more detail in Part III, this building of a highly respected public image had a two-fold effect. First, it tended to make synonymous the name G. E. with a strong, vast, and economically highly important institution in the minds of the general public; second, it tended to develop and reinforce an awareness of greatness of the company in the minds of company personnel. Public opinion surveys conducted periodically and as late as the early 1950's demonstrated conclusively that no brand, trademark, or monogram of any industrial company had as high public recognition, or as high favorable acceptance.

Diversification and expansion into consumer markets.--

As Swope entered his presidency in 1922, the company was struggling under the impact of the 1921 depression. One-fourth of the 1920 labor force had been laid off; the long heavy boom had been arrested. Many management people, inside and outside the company, felt that future industrial growth would proceed at a slower rate. Further, many

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management people within the company having witnessed tremendous growth felt, and so expressed, that the company was as large as physically possible. Additionally, there is evidence that highly placed people in government and elsewhere, still recalling the great trusts and their social impact, felt that the company was at maximum size "for the safety of the company."

The company was large, and powerful within its industry, in 1922. It had become the fourth largest industrial corporation in the country in a short thirty years--significantly with many of its founding engineering and financial fathers still actively engaged in its management. Its volume of sales was double that of its nearest competitor. The company centered primarily on the power industry, producing and marketing power-generating apparatus for electric utilities and power utilization apparatus for industrial firms. The consumer market served was limited to that for electric lamps.

In spite of the widely prevalent feeling that the company had reached some kind of optimum size, Swope saw new fields for the company, and made the decision to expand and diversify the company into consumer markets for electrical appliances. This decision, made early in the 1920's to diversify the company's business into about equal thirds--capital goods, industrial-user goods, and consumer goods--was one of the most far-sighted

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decisions in the company's history. The resulting additional decision to enter the electric refrigerator market on a mass-production basis put G. E. into the electrical appliance business--a decision which, with a steadily increasing array of appliance products and a concomitant buildup of advertising and public relations made the G. E. name a household word.

Development of "employee benefit" programs.--Swope consistently maintained that "men were more important than machines." Both his critics and his admirers agree that he was a pragmatist, and not an idealist in this regard; Swope was a superior organizer and integrator, and possessed the executive talent of optimally marshalling and deploying all resources, human, physical, and financial.

He frankly rank-ordered the various "publics" with "customers and the general public" placed first, followed in order by "workers," "the industry," and "stockholders" (Late in his career, he placed "workers" in the first position).³

The emphasis on the workers as a vitally important resource led to implementation of a number of employee-benefit programs. A pension plan had been initiated as

³Loth, op. cit., p. 162.

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early as 1915, and was greatly expanded in the 1920's, with the company paying the entire cost. Numerous other programs involving insurance, health benefits, savings plans, employee training programs, unemployment insurance, etc., for all employees were pioneered by the company. This must be viewed in the proper perspective; such programs, common-place today, were perceived by many executives in industry at that time as "radical" in character.

Development of union relations.--Closely allied with the importance attached to employee benefits was the philosophy developed by top executives of relations with trade unions. Swope believed in unions, and accepted them as functional. This is not to say that there were not continual problems and negotiations. But the G. E. executive management was not anti-union, and again was regarded by other industry executives as "radically" progressive.

In brief summary:

1. The company continued to grow through the decade of the 1920's by diversifying into consumer markets. The public image of the company grew both in public awareness and in public respect.
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laboratory and its noted scientists introduced an array of technological innovations; development and application engineering groups developed new technologies for the application of electrical power equipment to industry, revolutionizing industrial productive techniques.

3. The "people" side of the company was increasingly emphasized. A wide variety of employee-benefit programs evolved--viewed by business men outside the company as "liberal," or "radical," and, in some cases, as "dangerous."⁴

The Formal Organization Structure, 1922-1940

The formal organization structure at the beginning of Swope's regime in 1922 is pictured in Figure 2, page 46. Basically, the organization structure was to remain unchanged throughout Swope's era.

There were adjustments and modifications, of course. As the company moved into the appliance business, the "Appliance and Merchandise Department" was created as a separate operating component, with its own self contained functions of engineering, manufacturing, and sales. Further, as the company acquired other electrical enterprises, e.g., Telechron (electric clocks), Hotpoint

⁴Leon Keyserling, Chairman of the Council of Economics Advisors in the Truman administration recently remarked that when Congressional hearings were held in the mid 1930's on Social Security, Gerard Swope of G. E. was the only business executive testifying in favor of the concept of Federal Social Security.

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Company (appliances), Locke Insulator Company (insulators), an executive policy decision was made permitting these acquired companies to continue to operate quasi-autonomously and under their own names.

Hence, by 1930 (see Chart 1, Appendix I) the formal organization structure remained essentially the same in form. It was still highly centralized. Even as late as 1939, nearing the end of Swope's regime, the structure remained the same; an additional operating department, the Radio Department had been added, but the anatomy was unchanged. The important point to note about organizational development from 1892 to 1940, the end of the Swope era, is that the organizational structure remained in a set of vertical functional hierarchies (engineering, manufacturing, and sales). Executive control was highly centralized; that is, no integrated control existed over all the functions short of the President's level. True, the slight exception existed for the Lamp, Appliance, and Radio Departments, each of which had a Vice President in charge of all functions. But the functional hierarchies within these departments were highly centralized; for example, the manufacturing function of the Appliance and Merchandise Department consisted of a wide variety of separate production operations for a great diversity of products ranging from toasters to refrigerators, each reporting through a channel of manufacturing management,

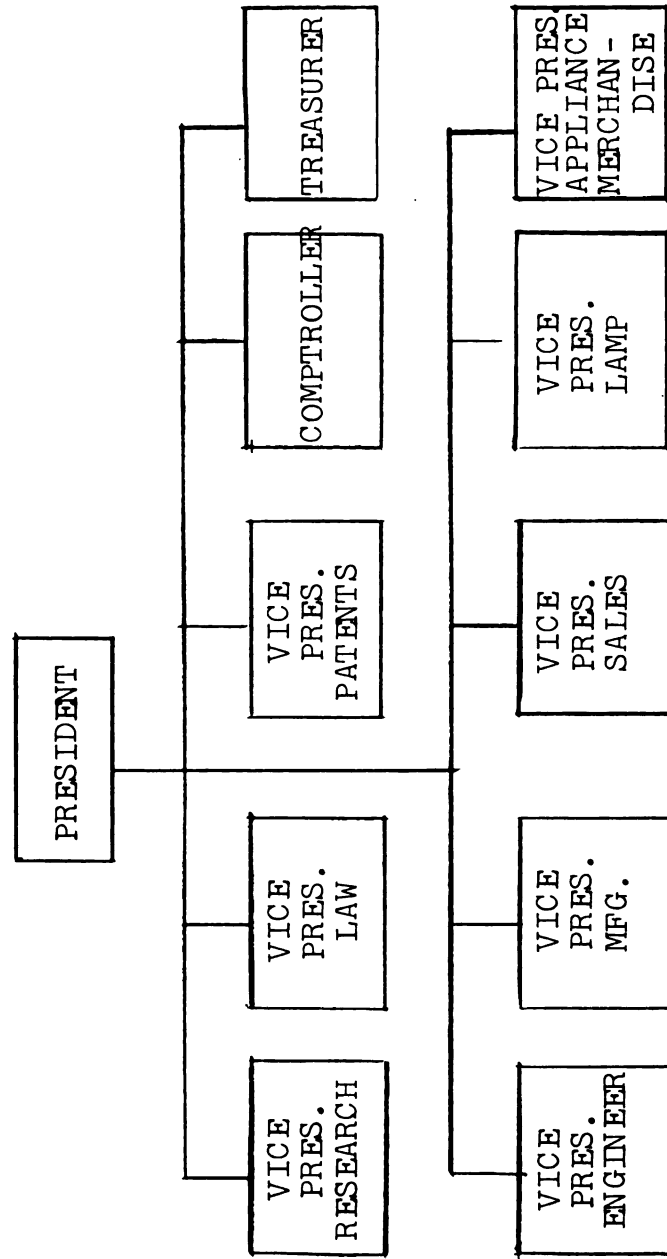


Figure 3.--Organization Structure, 1929.

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Hence, from its early beginnings to the early 1940's, the organization structure can be described as highly centralized, and structured in vertical, functional hierarchies. Schematically:

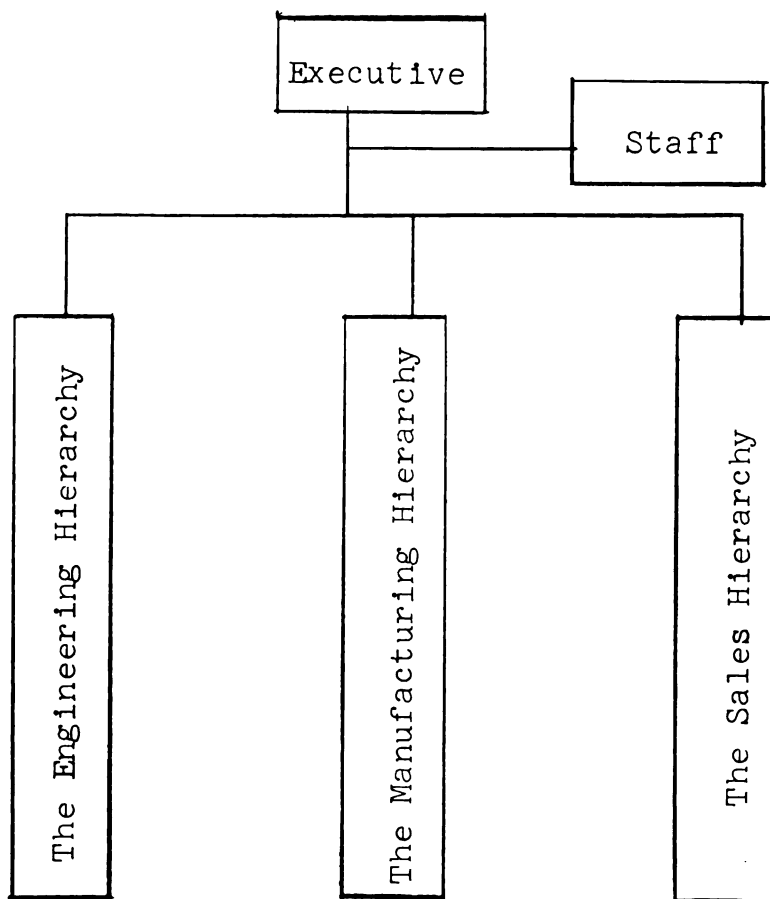


Figure 4.--The Functional Hierarchies

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It is significant to note that formal organization structure did remain anatomically the same during this period (1922-1940) of changing executive philosophy, changing objectives, changing market direction. But it is even more significant to view this organization-structure stability against the great changes in company productivity. Note Chart 3, Appendix I. From 1920 (just prior to Swope's election as President) to 1940, sales rose from \$276 million to \$456 million; number of employees rose slightly, from eighty-two thousand to eighty-five thousand;⁵ number of stockowners increased from seventeen thousand to 212 thousand; number of plants remained the same at fifty-four;⁶ number of product lines increased

⁵These data are misleading. Note that in the decade 1920-1930, number of employees fell from eighty-two thousand in 1920 to seventy-eight thousand in 1930, the drop occurring in 1929 and 1930 because of the Great Depression. In fact, during the early years of the 1930's, employment fell even below this. We have data only for 1930 and 1940, and do not know how far it fell below the 1930 figure. Thus, though the employment level at the end of the Swope era is only modestly over that of its beginning, great increase had occurred in the period 1936-1940.

⁶This, too, is misleading. In 1930, midway in the Swope era, number of plants had dropped to thirty-three primarily because of retrenchment due to the depression. But in 1940, it had risen to fifty-four, indicating significant physical growth in the period 1930-1940. And this did not mean that closed plants were all reopened; in some cases new plants were opened. We have no data on specific plants closed and/or opened; hence, there is an element of conjecture in these statements. But the cyclical swings in employment of resources due to the Great Depression must be considered here.

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The geographical dispersal of the company during the Swope period was largely limited still to the northeastern quadrant of the country. Some of the acquired plants were in other locations (e.g., Hotpoint in Chicago). But the company had not yet begun to expand its manufacturing facilities broadly throughout the national community.

There is no way to measure the productive efficiency of the company during this period. But the data show conclusively that great growth was achieved, and that such growth was accommodated within the existing formal organization structure. Many, many new product operations were "tacked on" the existing hierarchies of engineering, manufacturing, and sales, and each vertical hierarchy expanded vertically and horizontally, striving to accommodate the "new."

Precursors to Organization Change

But there is evidence of uneasiness in the minds of many managers of higher levels regarding the ability of the centralized, work-functionally hierarchial organization to continue to operate efficiently. There were two

⁷Not all this increase came from entry into the appliance markets. New product lines in the industrial power apparatus and the electronics markets were also proceeding apace.

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major precursors to organization-structure change, (1) overt criticism of the present organization structure, and (2) the creation of "management committees."

Overt criticism of structure.--As early as the late 1920's (six or seven years after Swope's election), the continued rapid growth of the company in sheer physical size, the tremendous diversification of products and markets, and the compounding of technology began to evidence to some managers an unwieldiness of organization. Executives at the vice-presidential level, looking at the sprawling parochial hierarchies below them began to speak for "reorganization." At a meeting of top management at Association Island in 1929, a severe indictment of the centralized functional organization was formally voiced by many executives. The sharpest criticism was presented by a Vice President destined to become President ten years later. He indicted the then present organization structure on the following bases:

1. It creates inertia.
2. It creates prolonged delays.
3. It wastes time.
4. It causes an overburden of clerical work and expense.
5. It discourages individuals' independent reasoning and reduces individual capacity.

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6. It lessens individual responsibility.
7. It retards the development of leaders.
8. It causes confused thinking about problems and policies.
9. It results in compromise decisions.

Here, then, in 1929 was a formal organization perceived by operating executives as cumbersome and unfitted to the growth opportunities and objectives of the company. It was perceived by them as a limiting constraint on growth. These were early seeds of the decentralization concept which were to germinate for nearly twenty years before fruition.

The "management committees." --As new product lines continued to be added, each, of course, required a group of design engineers, a manufacturing facility, and assimilation by the selling organization. This presented little difficulty in the early pioneer days of the company when the engineers, manufacturing people, and headquarters sales people were, figuratively speaking, housed side by side and were literally personally acquainted. But with growth came proliferation of these three work-function hierarchies, and physical separation. By the late 1930's, this organization-tree proliferation had made coordination between these functions extremely difficult, if not impossible.

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To alleviate this difficulty, "management committees" were established. The purpose of these "operating committees," and the rationale underlying them, has an important bearing on the analysis of the effects of later "decentralization," and it is important, therefore, to examine it in some detail.

At the various levels in the organization, management representatives of engineering, manufacturing, and sales involved in a specific line of products (e.g., small electric motors) formed the management committee. The expressed objective of this committee was:

To bring commercial and engineering groups together to plan ahead, propose new products, sponsor development programs, prepare specifications, and thus strive consistently and to the utmost that the company's product will always be adapted to the needs of individual customers and in advance of competition.⁸

Following the example of small motors, the committee may have consisted of the following:

1. The sales manager of the small-motors product line (who may have been physically located at General Office Headquarters, and not at the plant city).

⁸The General Electric Review (Volume 45, No. 8, August, 1942), p. 447. This is a company published but externally distributed "professional" magazine.

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2. The manager or supervisor of the design engineering group assigned to small-motor design (sometimes, but not always located at the plant city).
3. The supervisor of the manufacturing facility producing small motors (always located at the plant city).

(Remember that each of these managers reported organizationally upward through his own hierarchy and was accountable to it.)

The committee met periodically to jointly arrive at decisions affecting the operations of each of the functions. This "formalized" lateral communication was proclaimed as a "system which represents a democratic approach to problems of organizing technical skills for cooperative effort. . . (and is) designed to decentralize talents . . . and engineering skills."⁹

There were many such "Management Committees," and based on personal observation by the author and on research findings, they provided valuable managerial process, coordinating activities at various levels up and down the respective hierarchies.

⁹General Electric Review, op. cit. (Underlining added).

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Note, however, that the committee had no integral managerial authority, per se. Unresolved problems had to be passed upward by each of the members through his own hierarchy until they were jointly solved by a "Committee" at a higher level. Conceivably, even at the top level of the hierarchies, the vice presidential level, a problem could remain unresolved, in which case only the President could make an authoritative, over-riding decision.

Members of the management committees individually had no vested authority over the other members; however, research findings indicate that individual members did achieve in many cases a measure of power over the committee. There is ample evidence that in a significant number of cases, the sales, or "Commercial" manager "ran the show," and in essence dictated to the engineering and manufacturing members.

Thus, evidence exists that the formal organization structure was perceived as being inadequate for continued, effective growth--by overt expression in the late 1920's, and by structural makeshifts in the late 1930's. If these were indicators of the need for structural change, why is it that real structural change took so long in coming--in fact, until 1950? It could be argued that the chief executive feared the loss of control, or it could be argued that no one knew how to effectively accomplish a

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vast structural change. We conjecture that the seeds for organization-structure were there, but two great events in the company's external world deterred their coming to fruition--the Great Depression, and World War II. From 1930 until about 1937, management of the company turned its attention to the business of coping with the economic depression. From about 1940 until 1946, the company "went to war." From 1946 to about 1950, the company was accomplishing the gigantic feat of turning its engineering, manufacturing, and marketing into a vastly changed (and changing) social and economic world. Throughout the decades of 1930-1950, therefore, a "moratorium" on organizational structure change was intentionally declared. We say "intentionally" because official company statements made at the outset of the great reorganization of the 1950's so state. And study of organization and planning for its change began in an unobtrusive way even during the war period--also evidenced by later company statements.

Summary

The observations in this and the preceding chapter appear to substantiate the proposition that a given formal organization structure can effectively accommodate physical growth, the development and assimilation of technology, and now programs of adjustment to external change only up to some optimum point. Beyond this point, existing structure

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can no longer accommodate such change. Thus, pyramiding technology, the drive for physical growth,¹⁰ the developing of new programs for market achievement are essential ingredients in the process of organization-structure change. The next chapter, describing the massive organization change in the 1950's additionally supports this view, and presents explicit statements by company executives to such effect.

¹⁰We hypothesize that the drive for growth really has its roots in the drive for sheer survival.

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CHAPTER VI

DECENTRALIZATION, 1951-1960

The Ralph Cordiner Era

We are not describing in detail the period 1940-1950. In 1940, Gerard Swope retired as President and Chief Executive Officer, and was succeeded by Charles E. Wilson. Wilson was regarded within the company as an outstanding executive who would guide the company capably. He was an outspoken advocate for a "new" management organization structure. He had begun his service with G. E. as an "office boy" in the early 1900's at the age of about fourteen, and was destined to achieve the quite rare distinction of celebrating fifty years of active company service before the mandatory retirement age of sixty-five. He had risen through the managerial ranks of the manufacturing component of the Appliance and Merchandise Department, had served as Vice President and General Manager of that department, had served as corporate executive vice president. Soon after his elevation to the presidency, his executive attention had to be turned to shaping the company's productive facilities to the war effort. For a period of two years during the war, he was tapped for governmental service in the War Production

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Board, during which time Swope returned from retirement to serve as President. After the war, in 1946, Wilson guided the company in its readjustment to a "new peacetime economy." Again, the focus was on expanding technology, the adaptation of war-generated technology, and the expansion of new and refurbishing of old productive facilities. Note in Chart 3, Appendix I, that during the decade 1940-1950 (his term of office), sales increased from \$456 million to \$1,960 million; employees from eighty-five thousand to 183,000; number of plants from fifty-four to 117; number of product lines from 281 to 328. Spatially, too, the company had expanded.¹ Hence, the familiar story continued in the 1940-1950 decade--mushrooming technology, spiraling demand, increasing employment, increasing product development, expanding productive facility--all "hung" on essentially the same basic formal organization structure. But Wilson, the advocate of organization change, prepared for change. In 1946, he charged Ralph Cordiner, first as Assistant to the President, and later as Executive Vice President, to formalize plans for a vast reorganization. This was not a sudden executive move. As discussed in Chapter V, company executives were expressing concern about what they perceived as inadequacies of the centralized,

¹Data on number of plants and location is not available for 1950. But in 1952, number of plants had risen from fifty-four in 1940 to 131, located in ninety-eight cities in every quadrant of the country.

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functional organization as early as 1929. During World War II, the company began a period which the present Chief Executive Officer of the company described as "almost explosive growth which caused its managers to question whether it might not be necessary to evolve new techniques of organizing and managing the company."² Under the pressure of war production, the company's output shot from approximately \$350 million in 1939 to \$1,370,000,000 in 1943--an increase of over four-fold in four years.

Further, company executives forecast a post-war opportunity for a continuing and compounding demand for electrical and related products--a reflection not only of a general change in the economy and the society, but also of the burgeoning technology which had been even further accelerated by the technological innovations of the war era. By the end of the war, company officials were predicting a doubling of the company's business in less than 10 years--or, a volume of \$3 billion by the mid-1950's. It was obvious as stated repeatedly and publicly by company executives that a company with such growth characteristics, and operating on such a scale, required a different managerial approach than the company of the 1920's and 1930's.³

²Cordiner, op. cit., p. 44.

³Ibid., p. 45.

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Of course, this organization problem had long been subject to "on-again, off-again" study. But during the war years, Ralph Cordiner, then Vice President and Assistant to the President, began the task of analyzing the problems of organizing the company for the anticipated post-war growth period, and of recommending a specific plan of implementation. He is generally regarded, inside and outside the company, as the "architect" of the company's decentralization concept and its implementation. He was elected President and Chief Executive Officer in 1951.

In discussing decentralization as practiced in General Electric, it is important to note that this is a process much beyond and much deeper than merely a shuffling and reorganizing of facilities and organizational components. Underlying it is a managerial philosophy of the managerial process which differs radically from that which existed prior to decentralization. As Cordiner himself put it in his 1956 McKinsey Lectures at the Graduate School of Business, Columbia University:

Every company should be managed with some workable, ethically responsible philosophy of management. That is, the managers of the company should be in general agreement on a set of underlying principles that will guide their work in providing leadership for the company. For some companies, the set of principles that guide managers may be tacitly understood without ever being presented systematically. This may be a part of the company's tradition or it may even reflect⁴ the personal philosophy of the chief executive.

⁴Here we conjecture he is referring to General Electric, pre-decentralization.

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While General Electric's present philosophy of management has had a long evolution in company tradition and reflects the personalities of its great leaders in years gone by, considerable effort has been devoted in the past ten years to "thinking through" and presenting this managerial philosophy in a systematic way.⁵

This is a significant statement to which we shall later return in the discussion of the "process of social system change."

The Concept of Decentralization

Whereas it is true that there was a physical decentralization or

rearranging of organizational units in smaller, more manageable pieces--and whereas decentralization was undertaken with respect to products, geographical location, functional types of work, and markets--the real key to the G. E. concept of decentralization lay in the thorough decentralization of responsibility and authority for making business decisions.⁶

Or, put another way, decentralization in General Electric conceptually and definitively was the delegation of business decision-making authority and commensurate accountability for the efficacy of those decisions. Ten basic guiding principles of decentralization were established, and are being reiterated here because of their import as variables influencing managerial behavior-patterns, which will be discussed in depth in subsequent chapters.

⁵Cordiner, op. cit., pp. 40-41. Note the inference of "scientific management." Note also the damning with faint praise of management via personality, possibly a hint of the coming increase of rational and secular approaches.

⁶Ibid., p. 47.

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The Guiding Principles of Decentralization

1. Puts authority to make decisions as near as possible to where action takes place.
2. Gets best overall results by getting greatest and most applicable knowledge and most timely understanding actually into play in the greatest number of decisions.
3. Works only if real authority has been delegated, and not if details then have to be reported, or worse yet, if they have to be "checked" first.
4. Requires faith that man in decentralized jobs will have capacity to make sound decisions in the majority of cases.
5. Requires realization that the aggregate of many individual sound decisions will be better for the business than centrally planned and controlled decisions.
6. Requires understanding that the main role for the members of services (staff) components is the providing of help and advice through a few experienced people, so that operating managers responsible for making decisions can help themselves to make them correctly.
7. Rests on need to have general business objectives, policies, plans organized structure and relationships known, understood, followed, and measured;

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8. Can be realized only when higher executives realize that authority genuinely delegated to lower echelons cannot, in fact, also be retained by them.
9. Will work only if responsibility commensurate with decision-making authority is truly accepted and exercised at all levels.
10. Requires personnel practices based on measured performance, enforced standards and removal for incapacity or poor performance.

Note particularly the tenth point. We shall discuss the meanings attached to this, and other of the "guide points" in considerable depth later. However, to serve as a point-of-reference in the ensuing discussions, we make the assertion now, which we shall later attempt to verify by research findings, that although decentralization did in fact structurally create many "small" quasi-autonomous businesses--and did in fact delegate considerable decision-making authority to managers "down the line"--it did nevertheless give the executive a degree of actual control over the entire company which had never been enjoyed by previous executives. We are saying that after decentralization the executive literally held more power than ever before over managerial decision-making and other behavioral-patterns.

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Up to this point decentralization has been discussed as a philosophical concept--as almost, in a sense, an attitude, or frame of managerial-mind. This orientation was in fact strongly emphasized by the company. The remainder of this chapter will describe the ensuing organization-structural process of decentralization with regard to the actual re-structuring of the organization.

Structurally, the former vertical, functional hierarchies were dissolved, and the organization was re-formed into a three-part structure, distinguishing between the Product Departments ("operating" components), the Services (company-wide staff), and the Executive Office. The basic building-block of the decentralized structure was the Product Department.⁷

The Product Department: The Basic Building-Block

The Product Department was more than simply a realigned structural arrangement. It was the formation of a distinct business enterprise--engaging in an identifiable business on a profit-and-loss basis, with a single product line (or a "family" of highly compatible products), serving a definitely identifiable market. To form the Product Department, "horizontal slices" were taken out of the former vertical, functional hierarchies, assembling,

⁷In many respects, similar to the General Motors "division."

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therefore, for a specific product line, the engineering, manufacturing, and sales functions into an integrated business. To the management of this business was delegated operating authority and accountability for contribution to overall company growth and profitability. The general criteria for the formation of this operating-business were:

1. The department should represent a logical, identifiable, and complete product business entity.
2. It should be a "business" which is akin to a proprietorship, for which its executive manager can be held responsible and accountable for performance, achievement of required results, and achievement of profitability, in accord with measurable and assigned standards.
3. It must have an actual or potential sales volume enabling it to operate "on its own feet," quasi-autonomously (Average per department about 25 million dollars annual sales).
4. It must possess all resources--human, physical, and financial--to perform its operation.
5. It must have its own distinct and identifiable market.

In essence, then, the Product Department operated very much as an independent small company, with its general manager performing an executive role very similar to that of the President of a small company.

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Certain broad company policies, of course, were spelled out in the "charter" of the Product Department.

For example:

1. Product scope was determined for the department; that is, entry into new product fields required executive approval (i.e., the locomotive department could not arbitrarily decide to enter the automotive industry); discontinuance of a product required approval (lest its discontinuance have unfavorable market impact on other departments), etc.
2. Certain company-wide activities such as company-wide letting of steel contracts, etc., were reserved.
3. Company-wide employee-relations policies regarding employment benefits, pension, salary administration policy, etc., were required to be followed.

But save for the relatively few integrating policy requirements, the General Manager of a Product Department was given great freedom in operating decision-making:

1. In essence, he "rented" building facilities from the company, and proceeded to "run" his business.
2. He had authority to hire and fire--to purchase his resources--to determine design of his product--to develop the manufacturing techniques as he best saw fit--to develop marketing strategy and

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programs--to price his products--to determine terms of sale--to establish service policies--to train and develop personnel.

3. He had authority to make capital expenditure decisions up to half a million dollars without approval from higher executive levels.

The position of General Manager, thus, was one of great authority and responsibility, and demanded executive ability and performance of extremely high caliber.

The other side of the coin was his accountability. Although he had delegated to him great decision-making authority, and higher-level executives did not in fact tell him how to make these decisions or how to operate his business after decisions were made, he did have a high degree of meticulously spelled out standards of accountability, and was personally measured and evaluated by his department's performance and results in the following categories:

1. Profitability, short and long range, of each of the departments product lines, as measured by return on investment, net to sales, and total profits earned.
2. Optimum sales volume--i.e., maximum long range sales volume without sacrificing optimum profits.
3. Market position (a measure of his department's market share vs. competition).

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4. Productivity of his department (effectiveness of his utilization of men, capital, and raw materials).
5. Technological leadership.
6. Personnel development.
7. Employee attitudes.
8. Public (social) responsibility.
9. Balance between short range and long range goals.

Although dollar amounts or numbers, assigned to these measurement areas varied from department to department, the standards themselves were uniform. Hence, although authority was delegated, a high degree of control of performance and results was achieved by setting a different kind of bounds on the General Manager--prescribed measurable standards for the results. Coupled with this is the clearly published admonition that failure to achieve the predetermined results subjected the General Manager to removal from the position. (We shall return to the delegation of authority and its accompanying accountability in Part III and again in Part IV, when we treat them as input-variables in analyzing and explaining managerial behavior-patterns. Here we are treating them only as elements of structure in describing organization change in a historical sense.)

As the executive of a product business, the Product Department General Manager was responsible for all the work-functions required for that business. These were

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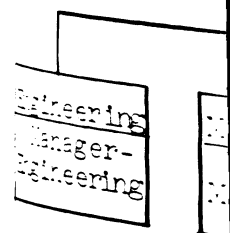


Figure 5.--Pro

classified as engineering, manufacturing, marketing, finance and employee and community relations. (A few departments had additional work-functions where warranted, e.g., operations research). Each of these functions was headed by a functional manager reporting directly to the General Manager. The organization structure, therefore, was:

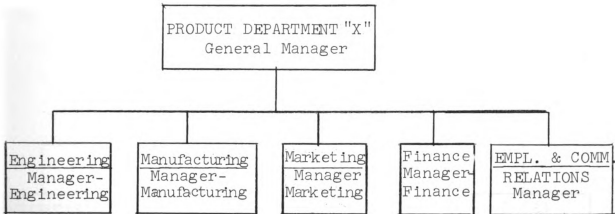


Figure 5.--Product Department Organization Structure

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Figure 6.---7

This group of management, with the general manager clearly and definitively in command, formed a "management team," utilizing and integrating executive skills and the highly specialized functional-management skills. Each of the functional sections above, of course, had at least one, and often two additional levels of management reporting to it. For example, the marketing manager may have had a marketing organization reporting to him as follows:

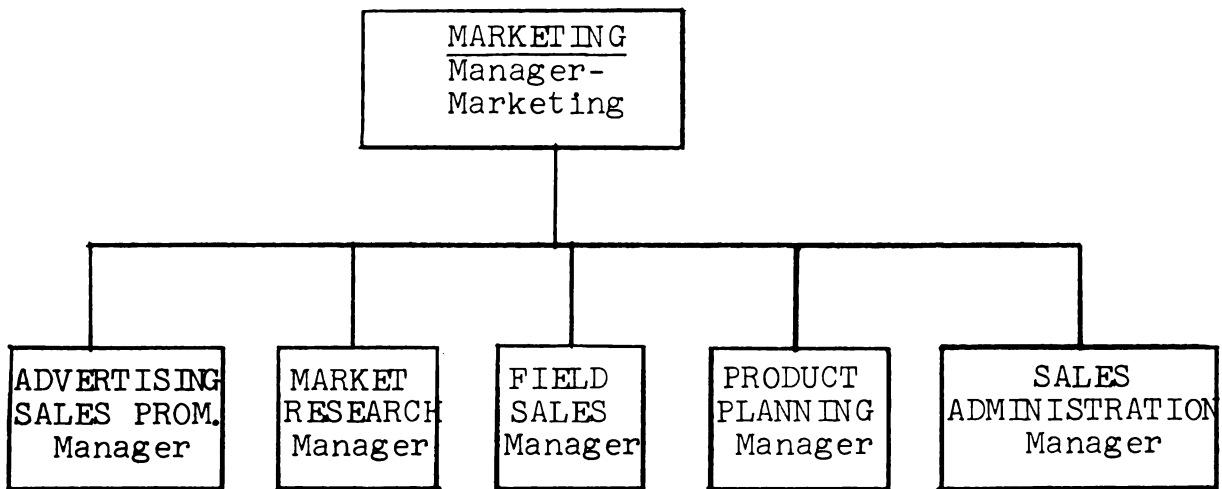


Figure 6.--The "Function" Organization Structure

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Each of the managers reporting to the Manager-Marketing may have had an additional level of management below him, e.g., the Sales Manager may have had a number of Regional Sales Managers. Also, there may have been horizontal divisions of labor, e.g., there may have been two or more sales managers, differentiated on a product or market basis.

Thus, the functional manager actually had two elements to his role. He served as a "line" executive, running his own functional organization in accordance with objectives and policies determined by his General Manager; also, he served as a "staff" executive, forming with the other functional managers a "management team" working with the "executive" (the General Manager).

The "Division" Level

For the purposes of executive management,⁸ the Product Departments were grouped into Divisions. The Division might be described as a family of compatible businesses. The Division General Manager, a Vice President and officer of the company ostensibly had the role of long-range planning for his Division, and for the periodic review of his departments' performance. Under the theoretical concept of decentralization, he was directly in the

⁸Cordiner, op. cit., p. 63.

"line" chain of command between the Executive Office and the Product Departments, but delegated operating responsibility to the General Managers of the departments. Practically, however, as research findings will indicate, the Division Vice President did in fact managerially behave as a "line," operating executive, and retain more operating authority (sometimes subtly) than the pure decentralization concept proposes.

The "Group" Level

Similarly, Divisions were arranged in compatible "families" known in company parlance as "groups," each headed by a "Group Executive" who was designated as a member of the "Executive Office."

The "Services"

With the company decentralized to a relatively large number of quasi-autonomous product businesses, many of which were serving the same market, the need for a strong company-wide staff service was accentuated. Staff groups, referred to as "Services," each headed by a Vice President designated as a "Service Officer" were composed of individuals highly competent in professional skills. The mission of the services was to carry on functional research in each of the functional fields (e.g., Marketing), and to be available to the operating components to "teach, advise, and counsel."

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The Overall Management Structure

Schematically, therefore, the management structure of the company after decentralization appeared as shown in Figure 7, below.

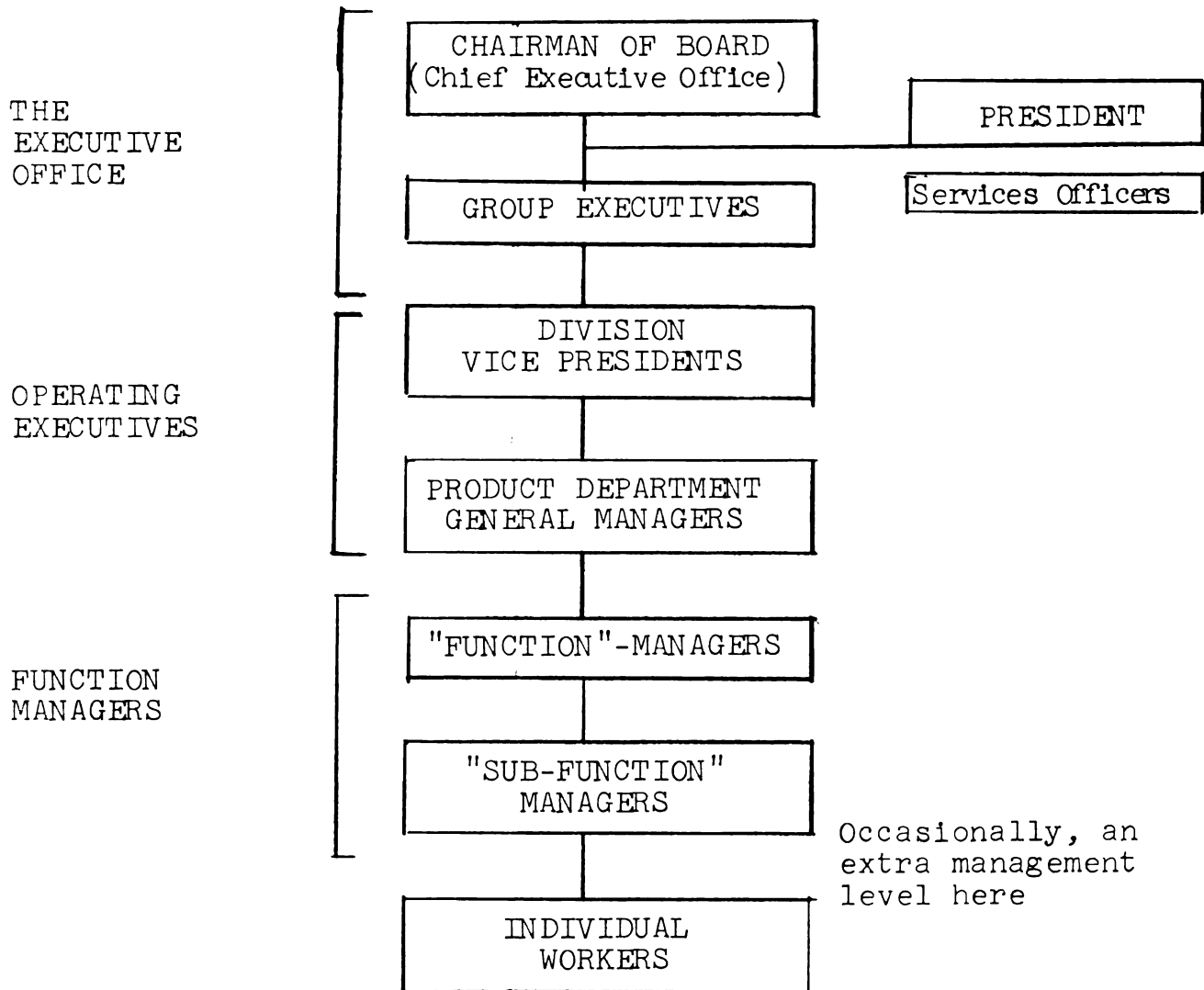


Figure 7.--Management Organization Structure after Decentralization.

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Under the former centralized structure the line of communication between an operating executive and individual workers was long and tenuous, with a great multiplicity of management layers. Further, the horizontal linkages between the long, vertical functions were accomplished only by "committees" which possessed no decision-making authority.

After decentralization the line of communication from Chief Executive to individual worker was shortened to only six (or seven at most) levels of management. Further, the functional work was horizontally linked together, with firm decision-making authority, at the product operating level. Thus, each of the product departments became a semi-autonomous business with simple line-and-staff structure, housed "under the same roof"--highly reminiscent of the total company in its early days. Ideally, authority and accountability was delegated commensurate with the level and responsibility of the position all the way down the management line.

"Operating" committees were prohibited. Even the position of "assistant manager" and "assistant to the manager" were eliminated--again, based on the tenet of decentralization that authority can be delegated but not shared. The word "assistant" is non-existent in the vocabulary of the company. Accountability is assigned only to individuals.

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Figure 8.--Growth

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Implementation of Decentralization

At the end of World War II, in 1945, there were no product departments. The growth of departments and divisions is shown in the following figure:

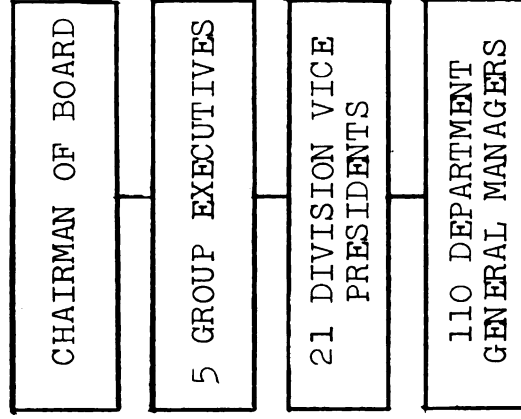
Figure 8.--Growth of Product Departments and Divisions, 1946-1960.

Year	No. of Departments	No. of Divisions
1946	16	6
1947	33	7
1948	33	9
1949	31	9
1950	37	9
1951	43	10
1952	62	20
1956	100	21
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1960	110	21

The great formative period was 1951-1955, the period in which much of this research and analysis is focused.

Another revealing facet of structure is shown in Figure 9, which depicts the distribution of operating executive management at the end of 1961.

Figure 9. Operating Executives, 1961 (Source: Annual Report, 1961, page 31).



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Note that in 1960 the company (see Chart 3, Appendix I) had grown to a sales output of 4.2 billion dollars; employment had risen from 183,000 in 1950 to 251,000; number of stockowners had risen from 250,000 in 1950 to 417,000; number of plants⁹ had increased from 117 in 1950 to 168; number of product lines had increased from 328 in 1950 to 400; number of product departments had risen from 37 in 1950 to 110. Also note in Figure 9, that this vast complex was managed and operated by a total of only 137 operating executives. Note further the pyramidal aspect of this management elite, and the "real" control, therefore, of the Chief Executive.

The formal management organization structure for the first time in the company's history had been truly--and drastically--changed. (See Chart 1, Appendix I for its schematic diagram with reference to the organization of the past.) Even the "affiliated companies" were included; each was absorbed into the new G. E. organization structure as divisions or product departments. For example, the former Hotpoint Company became the Hotpoint Division; its office of President was eliminated, and supplanted by that of Vice President (of G. E.) and General Manager, Hotpoint Division.

⁹We have no data for number of plant cities in 1960. However, in 1961, number of plants had risen to 170, located in 134 cities (Chart 2, Appendix I) located in every major geographical sector of the country.

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Summary

The highly centralized functional structure which had served the company well in its pioneering and early-growth days was recognized by management as becoming unwieldy and limiting to continued growth. As executives looked into the future, particularly during World War II, they perceived and correctly forecast greatly expanding technology, changing social and economic environments, and sharply increasing demands for electrical products in the home, in the factory, and in governmental defense operations. Correctly forecasting a doubling of company volume in less than a decade, it was deemed imperative to realign the company's basic organization structure to enable the company to continue its growth. This involved much more than shuffling of resources, skills, and facilities--it required new concepts of management, new philosophies, new managerial attitudes.

The decentralized structure described in this chapter was not accomplished without mistakes, conflicts, and misunderstandings. The significant point in summary here, however, is that this vast company did successfully, in the net, adjust to its changing external technological, economic, and social environments; and in so doing, initiated processes of change which even now continue to provide forces for further change, so that the company as a system,

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CHAPTER VII

THE APPARATUS BUSINESS

From its early days, General Electric has devoted a large proportion of its productive resources and capacity to the production of capital goods. Whereas it was the electric lamp which initially sparked the entire electrical industry into being, the great bulk of industry effort soon turned to the mandatory development of power generating machinery and transmission equipment. As innovation in the power equipment field continued, G. E. and others in the industry turned to applications in industry. The practical application of the dynamo in larger and larger sizes to the generation of electric power for lighting led to the development of a similar machine--the electric motor--which by the late nineteenth century had found its way into railway applications. By 1887, five years before the formulation of G. E., its predecessor companies and their competitors had electric motors installed and in use in more than a hundred trades and industries, driving shoe machinery, coffee mills, lathes, printing presses, freight elevators. With the successful development of alternating current machinery, pioneered notably by

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Westinghouse, transmission of power over relatively long distances became technically and economically feasible. The great era of electrical horsepower had begun--multiplying man's productive capacity a hundred-fold.¹

With the exception of the electric lamp itself, General Electric's rapid growth during its first thirty years was entirely in the field of power apparatus, designed for and applied to industrial-use applications--power-generating and transmission machinery; power distribution equipment; electrical measuring and metering devices; power control and switching devices; power utilization equipment including electric motors, electric heating equipment, etc. This array of power equipment, or heavy and light capital goods, whether used directly by the purchaser (e.g., a motor to drive a steel mill roll-out table) or used by the purchaser as a component in his marketed product (e.g., a motor purchased and installed on a lathe by a machine tool manufacturer), is subsumed under the generic industry category of apparatus.

The apparatus business is big. Even with the great growth of electrical consumer goods, beginning in the 1920's, including refrigerators, ranges, washing machines, radios, et al., the demand for apparatus applications in

¹Hammond, op. cit., pp. 118-119.

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industry continued to compound, so that even today, the apparatus business is a major portion of output. General Electric in 1961, for example, with a total sales of 4.5 billion dollars, announced the breakdown of this volume as:²

Heavy capital goods	24%
Components, materials and light capital goods	27%
Defense goods	24%
Consumer goods	24%

Even counting out "defense goods," and considering only sale of goods to the industrial markets, about half, or 2 billion dollars plus, of G. E.'s output was in the apparatus category.

Another significant characteristic of the apparatus segment of the electrical industry is the high level of innovation in the application of electrical products and systems to industrial customers' processes. For sixty years, application engineers and systems-engineers (as distinguished from product design engineers) have quested, constantly analyzing industrial processes ranging from steel making to newspaper printing, asking, "How can we do it better, more efficiently, more productively, more

²General Electric Annual Report, 1961.

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economically?" The large electrical manufacturer (and this include Westinghouse as well as G. E.) has thus been the innovative leader in a great many industries beyond its own. The apparatus segment of G. E.'s business has been marked by (1) a truly marketing, or customer-problem orientation, and (2) a great innovative, technological orientation. From the crude early motors, to the engineered-system of electrical apparatus powering steel mills, to the new technological world of electronics, to automated factories, to nuclear power--the G. E. apparatus organization, and G. E. apparatus people have been in the vanguard of the great technological age of the present.

This chapter will describe the G. E. apparatus organization in a structural sense, analyzing it prior to decentralization and after decentralization. We will examine this organization in another sense, explaining the underlying processes of change, and their functional and sometimes disfunctional results.

Apparatus Organization Prior To Decentralization

Chapter V described the centralized, functional organization which existed until the late 1940's. Here the discussion will center primarily on the sales function in that organization. This is not to belittle the engineering hierarchy in that organization or the product-design elements of it; certainly, the research and

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development of new products (the steam turbine, electronic products, etc.) provided the base for technological advance. But, the majority of the great advances in the innovative application of electrical products and engineered-systems of products were created by the sales organization. Further, the feedback of information and analysis of industrial customer processes and problems, which set the stage for new product designs, was generated by this sales organization.

It must be pointed out here that in addition to the Industry Sales Sections, there was a parallel group of industry-oriented and industry-assigned "application engineers" in the general-office organization of the engineering hierarchy. Thus, for example, in the sales industry group there was one section specializing in steel-mill applications; in the engineering industry group there was a counterpart application-engineering section specializing in steel-mill applications. These two sections reported to different hierarchies, but they were physically located together (or in adjacent quarters) and were identified by themselves and by others as a team. After decentralization they were to become literally put under the same management roof. (In the above technological discussion, we include these application-engineering sections and their achievements with the industry-sales groups,

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The sales organization prior to decentralization consisted basically of three distinguishable components--the "General Office" product sales sections, the "General Office" industry sections, and the field sales organization.

The "General Office" product sales sections.--For each major line of products a sales group specialized in that product line, with responsibility of providing product application information to the field sales force, of pricing the product, of determining product sales policies, of exploring need for new products, of maintaining liaison with engineering and manufacturing. These are major functions, and do not represent an exhaustive list. (Looking ahead to decentralization, it is clear that these sections were to be "pulled out" to form the core of the marketing sections of the new product departments. See Figure 6, page 85.)

The "General Office" industry sales sections.--For each major customer industry, there was a group specializing in the application of all apparatus products (particularly the engineered combination of products) to the processes of that industry. For example, there was a steel-mill section, a paper industry section, a machine-tool section,

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etc. These and similar sections, each headed by an "industry sales manager" were grouped into the "Industrial Division," likewise, there was an "Electric Utility Division" composed of sections specializing on power generation, power distribution, etc. The responsibility of the industry sales section was to become increasingly knowledgeable about its assigned customer industry, to understand the technological problems in that industry, to develop new applications of electrical apparatus to the processes of that industry, to make engineering and sales proposals for these new applications, and to assist the field sales force in sales negotiations. These sections were staffed with highly competent, technical personnel, many of whom gained national and even international renown within the customer-industries they served. They often came to know more about the technological aspects of the industry in which they specialized than did the engineering personnel of the industry itself. (Looking ahead to decentralization, it is clear than these sections could not be spun off to individual product departments, as they were industry-oriented, not product-oriented, and were involved primarily with systems of products.)

The field sales organization.--Even before G. E.'s formation in 1892, the predecessor companies had field selling organizations throughout the country. Upon the formation of G. E., these were consolidated into a "selling

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department," ultimately growing into a large, technically-trained, and highly competent sales force known simply as "Apparatus Sales."

There were other field sales components of the company, of course. After the consolidation of the lamp business, the Lamp Department maintained its own field sales organization. Likewise, as the company acquired other enterprises, e.g., Locke Insulator Company, these enterprises normally retained their sales forces. But for the apparatus-type products--the industrial, electric utility, and transportation capital goods products--the Apparatus Sales organization was the field selling arm. It was organized in a number of sales regions (approximately fifteen), each headed by a "Commercial Vice President." Regional headquarters were located in such major cities as New York, Boston, Chicago, San Francisco, etc., with branch offices in smaller cities. Each region's sales positions were staffed with college-and company-trained professional engineers; additionally each region had a corps of "product specialists" (field counterparts of the product sales sections at headquarters) and "application engineers" (field counterparts of the industry sales sections at headquarters). Additionally, each regional organization contained its own order-service facilities, financial facilities, engineering service facilities, warehouse facilities, etc.

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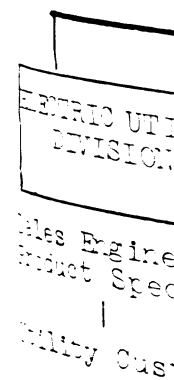
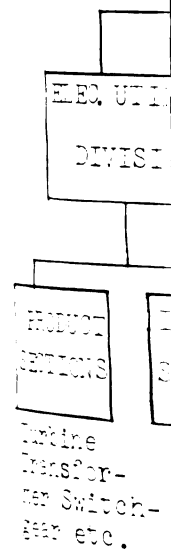
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The sales-engineering positions (and the sub-regional management positions) were specialized, to a degree, in the larger urban areas, on an industry and not a product basis. In the Chicago office of the Central Region, for example, the Commercial Vice President had three "division managers" reporting to him--Industrial, Electric Utility, and Transportation. Sales engineers in these divisions were assigned to industrial, electric utility, or railroad customers respectively. Further, where there was enough market potential to justify it, an individual industrial sales engineer was assigned to customers in one industry only--e.g., steel, or petroleum. But, in all cases, the sales engineer sold all apparatus products to his assigned customers, with the "back-up" help of product specialists on individual products and of application engineers on engineered-systems of products.

Ample evidence exists to validate the claim that this large Apparatus Sales organization was highly competent, and commanded great respect in industrial circles, considerable envy in competitive circles, and great prestige within the company itself.

Prior to decentralization, then, the overall sales-organization structure can be schematically depicted in the following simplified chart:



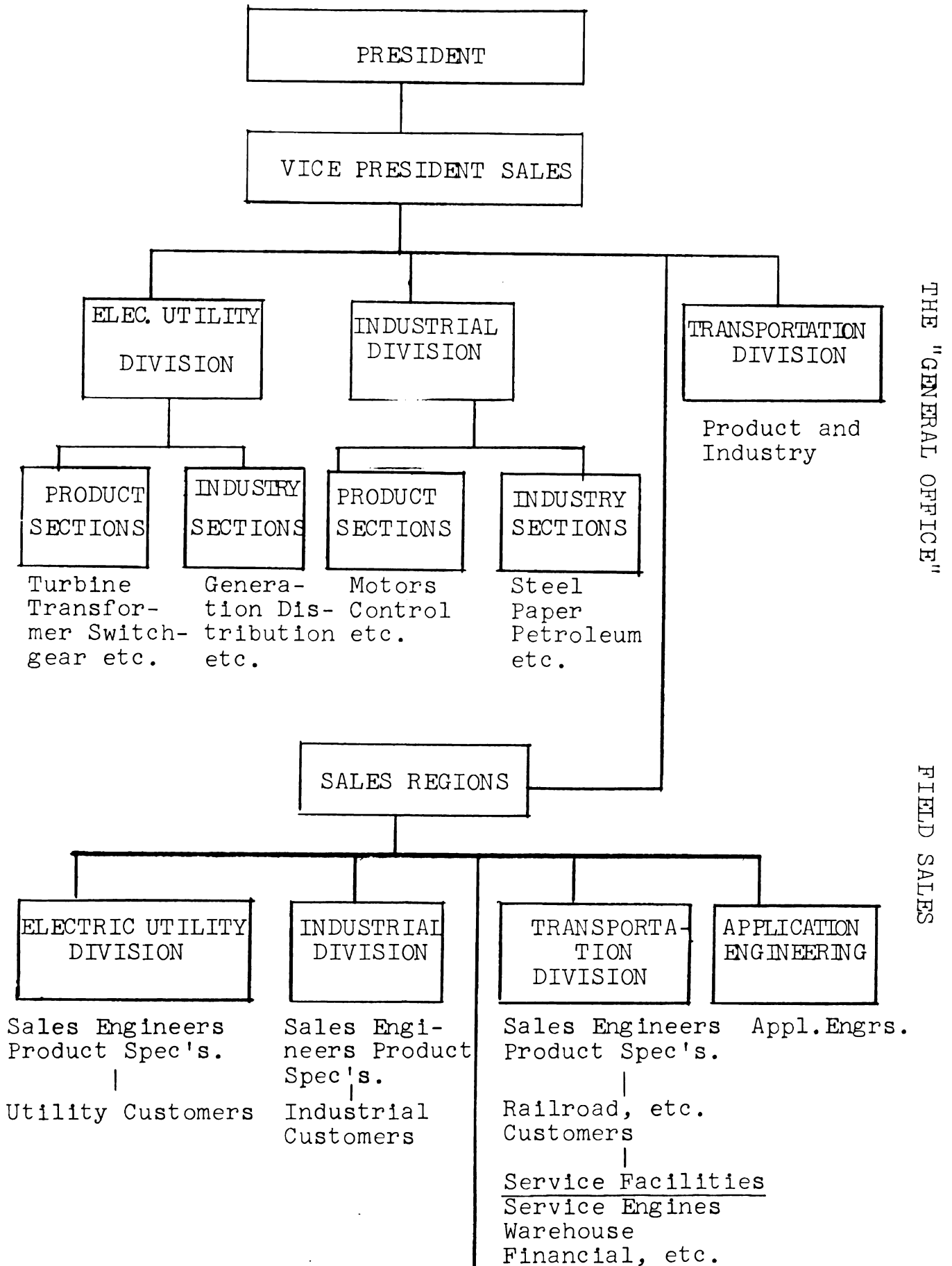


Figure 10. Apparatus Sales Structure Prior to Decentralization.

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The Apparatus Sales Organization During
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As Product Departments were formed beginning in the very late 1940's, and proceeding at a rapid rate in the early 1950's, a number of organizational adjustments had to be made in the Apparatus segment of the company's business.

Note that in the non-apparatus business--e.g., the Lamp Division--the philosophical changes and the organizational changes could be accomplished with relatively isomorphic or at least congruent structures. Within the Lamp Division, that is, as the "horizontal" slices were taken through the engineering, manufacturing, and product sales hierarchies, and individual product businesses were set up (Large Lamp Department, Miniature Lamp Department, etc.--each an independent business entity). The field selling organization serving all these departments was part of the Lamp Division "family."

Not so for the apparatus-type product departments. Three different, separate turbine product departments were formed, and were assigned to the Turbine Division. Four different transformer product departments were formed, and assigned to the Transformer Division. A number of motor product departments were formed, some assigned to the Motor and Generator Division, some to another division. As these product departments were formed, of

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course, the appropriate elements of the product engineering and manufacturing hierarchies were spun off, and the appropriate product sales element of the general-office sales hierarchy was spun off--all integrated into the new product department (see Figure 6, page 85). Note that this left the general-office components of industry sales and application engineering, and the field sales force independent of the product departments and their divisions. This residue (which of course was the preponderate bulk of the former sales hierarchy) was formed into the "Apparatus Sales Division" and was given the complete responsibility for the field sales function of all the apparatus-type product departments.

Thus, as decentralization proceeded, the following structural arrangement evolved in the Apparatus segment of the company's operations. This chart is schematic only, and merely shows the relation of the Apparatus Sales Division to the operating components. Note that although it provided the field sales function for a number of product departments, it was one organizational level above the Product departments. Note also that being assigned to one specific group executive, formal command-coordination existed only at the level of the President's Office.

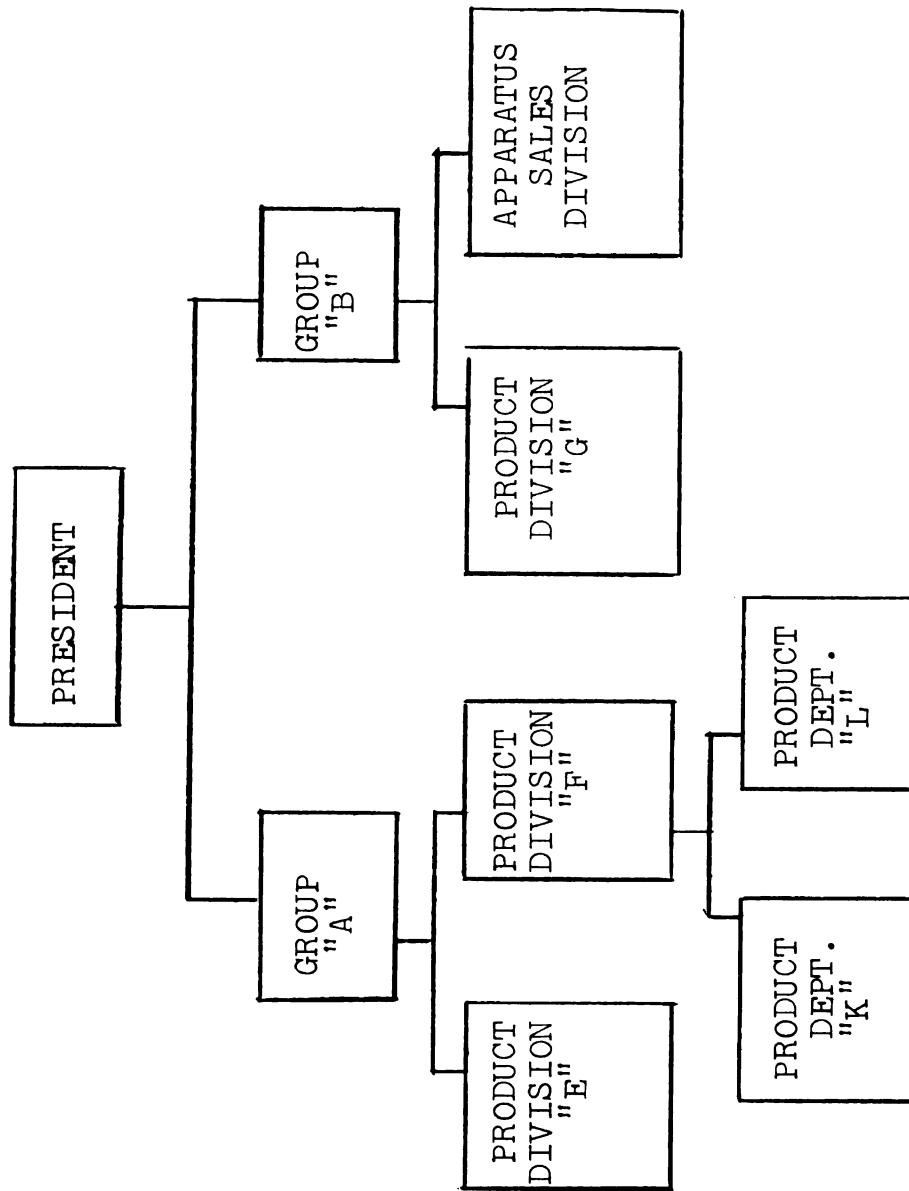


Figure 11.--Structural Relations, Apparatus Sales, and Product Divisions and Departments.

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It is implicit that this structure violates the principles of decentralization described in Chapter VI in that one essential element of the Product Department's business field sales was separately organized and outside its formal control. Why was it done? It was done because of market structures. (Note that we are discussing structure only, here; the social and psychological variables involved, which interacted with these structural variables will be discussed later.) Recalling that the markets served required in many instances the engineered "put-together," into a system, of the products of a multiplicity of the newly-formed product departments, it was clear that there had to be some "pooled" sales function serving these markets. Further, strictly from a technological viewpoint, it was eminently clear that the future success and growth of the company lay not merely in continued product development, but more significantly in the continued development of engineered-systems--completely automated steel-mills, automated systems of material-handling, etc. This was the technological backbone of the Company, market-wise--and the greatly accelerating technology throughout all industry augmented its need for continuance as a formally structured part of G. E.'s total approach to its markets, present and future. Therefore the ideals of decentralization were knowingly compromised for the apparatus portion of the company's

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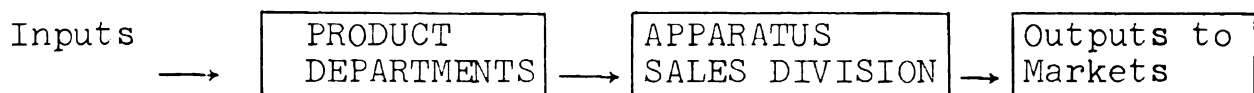
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business (which, it will be recalled, was approximately one half of the company's sales). That is, the field sales authority and organization was not assigned to the "autonomous" Product Departments.

Thus in a very real sense, two major organization "systems" evolved as a result of decentralization--(1) the product departments with their charters and delegated authority (an accountability) to operate relatively autonomously as profit-centered business enterprises, and (2) the Apparatus Sales Division, with its charter and formally delegated authority to provide the sales function for the Product Departments.³



Apparatus Sales Division Organization Structure

The structure of the Product Departments was described on pages 79-84, Chapter VI. After the "spinning-off" of the product sales sections from the former sales organization, the organizational structure of Apparatus Sales Division in the early years of decentralization (1951-1955) is shown schematically below: (See next page.)

³Here again, we are discussing only the apparatus business and disregard those Product Departments not selling through Apparatus Sales. Recall that some 30-35 apparatus-type Product Departments accounted for about half the company's business, or about 2 billion dollars in 1960.

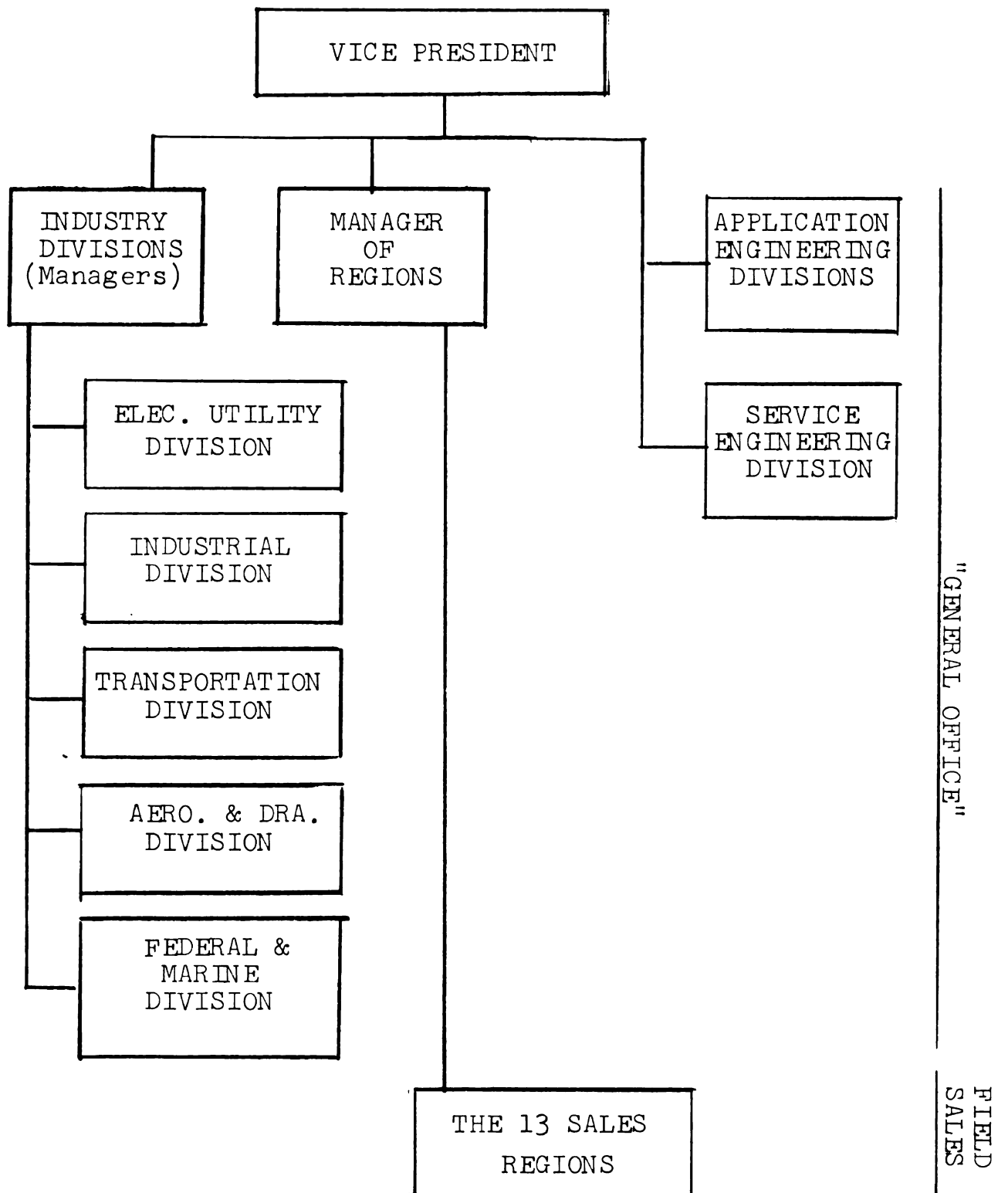


Figure 12.--Apparatus Sales Division Organization Structure, 1951.

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The changes in this structure from that of the former sales hierarchy in the centralized organization (Figure 3, page 61) are relatively simple; the product sales sections have been moved out to the product departments; the application engineering sections have been moved in from the former engineering hierarchy (the remainder of the latter, of course, having been distributed as the engineering components of product departments). Perhaps more significantly, the tasks of this organization remained essentially unaltered by virtue of the company-wide decentralization process.

Between 1951 and 1955, the period of rapid implementation of decentralization, the organization structure of Apparatus Sales Division remained basically unchanged. There were some organizational adjustments, to be sure, but the basic structure remained very much the same. For example, during this period, a number of the larger regions were geographically split and new smaller regions formed (to better plan for and operate in rapidly growing industrial markets). The "manager of regions" position was split to a "manager of northern regions," and a "manager of southern regions."

Several significant changes in Apparatus Sales Division organization structure occurred beginning about 1955; these will be described in the following chapter, and the influencing forces behind them quite clearly belong to the "post-decentralization" period.

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This chapter has focused mainly on the organization structure of the sales elements of the Apparatus business. It must be pointed out that during the decentralization period, 1951-1955, while this sales structure remained relatively stable, the newly formed Product Departments necessarily expended much effort on the sheer organizational problems of welding together manufacturing, engineering, marketing, employee relations, finance, and other functional components into an integrated, going business enterprise. Written charters for each position, objective setting, redeploying the people and physical facilities, and a hundred other complex organizational tasks were consuming managerial activities. Likewise, the "Services" from the executive office, with their wide variety of expertise in a score of specialized functions--organization planning, accounting and financial planning, etc., as well as marketing, manufacturing, and engineering--largely devoted their efforts to the implementation of decentralization of the product departments.

This did not happen all at once, of course; some product departments were formed early in the period--some reached organizational and management maturity earlier than others. In some cases, a relatively large product department was formed and organized, and was later split into two or more smaller departments--the latter process coming much more easily than the former.

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But for the most part, the period of decentralization, 1951-1955, found most of the company's managerial energies funnelled into the process of re-organization. It was not until about 1955 that the majority of the apparatus-type product departments were "in place," with integrated, "going" managerial teams, and hence began to look outward to their markets rather than inward to their organizing processes.

It was at this point of time about the mid-1950's, when the dynamic interaction of two major sub-systems of the company--the apparatus-type Product Departments and the Apparatus Sales Division--each organizationally independent of, but interacting with and functionally interdependent upon the other--began to produce disfunctional conflict between the two. Here was one significant element of the company, the Product Departments, with organization structure (and managerial ideology) having only recently come into being--interacting with another significant element, Apparatus Sales Division, with organization structure and tasks much the same as they traditionally had been. Here are seeds of potential conflict. The next chapter will describe what happened, from an historical, organizational point of view; again, the underlying social or moral forces will be analyzed later.

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CHAPTER VIII

POST DECENTRALIZATION, 1956-1960

By 1955, the major organizational objectives of decentralization had been achieved. Some one hundred product departments had been formed, and were operating as business enterprises. At the same time, the companies which had been acquired previously, and which had been operating as separate companies, were integrated into the G. E. organization structure as G. E. departments or division, with the same organizational standards, nomenclature, policies, etc.

Hotpoint, as mentioned earlier, had retained its identity as a company prior to decentralization; though wholly owned by G. E., it had its own President (who was also a Vice President of G. E.). Its marketing organization was completely separate from G. E.'s appliance marketing organization, but there was some common engineering and manufacturing. Hotpoint designed and produced all electric ranges, both Hotpoint and G. E.--whereas G. E. designed and manufactured all refrigerators, both G. E. and Hotpoint. By the mid-1950's, however G. E. had consolidated all G. E. major appliance manufacture at Louisville; Hotpoint became a "division" of General Electric; engineering and manufacturing were completely separated.

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Locke Insulator Company became "Insulator Department," assigned to the Transformer Division; the Trumbull Company became two separate Product Departments; etc.

Thus, by the mid-1950's, uniformity of organization structure and management philosophy pervaded the entire company. The role of product department general manager, and those of his engineering, manufacturing, and marketing managers were structurally uniform throughout the company. Uniform standards of performance-measurements and the formulation of common objectives were established throughout the company¹ (the implications of which will be discussed later in this dissertation).

Although decentralization in G. E. was defined and implemented as a managerial process, there was an accompanying physical dispersal of facilities. Expansion of physical plant had begun immediately after World War II, and continued through the early 1950's at a rapid rate. As new product departments were formed, they often left the old plant cities; individual product departments, as autonomous "little companies," appeared in new, modern plants in such cities as Roanoke, Virginia; Shelbyville, Indiana; Rome, Georgia; Hendersonville, North Carolina; Bloomington, Illinois; Phoenix, Arizona; and a score of others. To the outside observer, it appeared that G. E.

¹Cordiner, op. cit., p. 75.

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was atomizing its facilities; but at each new location, the Product Department General Manager and his management team were as peas in the company pod, philosophy-wise, objective-wise, organization structure-wise. Each reported to one of about 15 Division Managers, each of whom reported to one of about three group executives, each of whom reported to the Chief Executive. To the outside observer, it was obvious that G. E. manufactured a vast array of products (more different products than any other company in the world) distributed to an equally vast number of markets (hardly a single company, institution, or person in the society was not a potential customer). But the really amazing achievement through decentralization was not these great varieties--but rather, the sameness in the managerial process throughout this vast company.

There were shifts and adjustments, of course--some to correct inevitable mistakes, some to meet changing internal conditions, some to adjust to changing external environments. But such shifts in no way changed the basic tenets of the decentralization-concept, the management philosophy, or the fundamental organization structure.

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planning"--planning for the corporation twenty or more years ahead.² "Long-range planning" has been structured into all operating-management positions; the higher the management level, the greater its emphasis. Accordingly, in the middle 1950's, with the great re-organization behind, the Chief Executive, then Board Chairman, delegated the operating executive-management of the company to the President. A number of shifts also were made among Group Executives from time to time, changing assignments not the basic characteristics of these positions. For example, in 1953, five Group Executives were assigned respectively to the Apparatus Group, Appliance and Electronics Group, Defense Products Group, and the Affiliated and Foreign Companies Group. By 1960, there were also five Groups, but with different operating assignments and a different makeup of the respective division: Consumer Products Group, Electric Utility Group, Electronic and Flight Systems Group, Industrial Group, and International Group. Also by 1960, a new post of Executive Vice-President had been created.

This shifting or re-deploying of top executive positions and assignments permitted flexibility in executive planning and operation without disturbing (structurally speaking) the organization, charters, and

²R. J. Cordiner, Long-Range Planning New Dimension in Our Economy, a speech presented to Economic Club of New York, March 5, 1956.

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basic operations of the operating departments. Or, it enabled change (in objectives, direction, etc.) to be introduced by executive management without either disturbing or being blocked by organization structure. Whether it created other, nonstructural disturbances is debatable, as research evidence presented later will indicate.

The Division Level

The Division, as indicated in Chapter VII, was a "family" of compatible product departments. At the outset of decentralization, many product departments fell very naturally into compatible families--but many did not, and as a result, some divisions were "catch-alls." Also, as markets and technologies changed, and as some product departments adjusted technologically to these changes, they became more like, or more compatible with product departments in another division--and were shifted to that division.

In the late 1950's, many changes occurred at the Division level. Some new Divisions were created (e.g., Atomic Products Division); others changed their department composition. There is a great similarity here with the modern army, wherein a given military organization, e.g., the Corps, can retain structure and basic operating process but have flexibility in that military units

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All this was possible only by virtue of the commonness of philosophy, structure, measurements, and role-expectations.

The Services (Staff)

The change in Services in the late 1950's is more subtle. The charter of their Services--to pursue research in all the functional fields, to develop expertise in these functions, and to be available to teach, advise, and counsel--remained unchanged. As staff, the Services had no command authority; but as expressed in the published company charters, they had "the authority of knowledge." In the early days of decentralization, when product departments were being formed, and their managements were "new," the Services exerted great influence. One example: One of the Services, the "Management Consultation Services" contained the experts on organization--the men who researched organization, who processed decentralization from concept to fact, who set the ground-rules for organization, coordination, etc. In the early days, they became more than staff experts--they were in fact, executive, legislative, and judicial. As each product department was formed, its structure

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required approval by this Service; any deviation however slight required approval. This was tantamount to actual authority.

Other Services such as marketing, manufacturing, and engineering were vital during the early days of decentralization. It must be recalled that newly appointed General Managers of Product Departments were almost entirely managers with past training and experience in only one function, and had to learn to become overall business executives. The former engineer, or accountant, or marketer, therefore, upon appointment as a business executive required and generally welcomed the active assistance of the Services.

In the early days of decentralization (1951-1955), therefore, the role of the Services was highly and quite influential in the realm of operating management. By the mid 1950's, however, this kind of direct staff assistance was less required, as the company developed means of pre-training for professional general manager positions (to be described subsequently). Hence, the Services have largely reverted to the staff concept of research, teach, advise, counsel.

The Apparatus Sales Division

Chapter IX describes the Apparatus Sales Division as it existed through the decentralization period,

1951-1955. In the post-decentralization period, 1956-1960, a number of changes occurred, at first relatively minor, and finally very drastic.³

In 1955, the Vice President of the Apparatus Sales Division announced a major change in organization structure. The avowed purpose of the reorganization was two-fold; to better align the Apparatus Sales organization to the Product Departments it served; and to provide more effective and economical distribution in the market-places. The organization structural change itself was in two dimensions: (1) the separation throughout the entire structure of the selling functions and the various administrative and service functions (described in some detail below) and (2) the "decentralizing" of the actual selling functions (operations) and their management into market-oriented sub-organizations.

Immediately below the level of the Vice President and Division Manager, all administrative and service functions were "stripped out" throughout the entire organization including the regional sales operations. These were then set up as self contained "departments."

1. Financial and Service Operations. This "department" was responsible for all financial

³In this section we are discussing organization structural changes only. Changes in other social system variables will be described later.

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(budgeting, accounting, credit and collection, payroll, etc.), all order-service operations, all the "housekeeping" operations, all warehouse operations. This extended to the Regions, where a Regional Manager-Financial and Service Operations was appointed, reporting not to regional management but to the "national" Manager-Financial and Services operations at headquarters.

2. Installation and Service Engineering Department.

This department was responsible for engineering service facilities provided to industrial and utility customers for installing or erecting large electrical apparatus, and for engineering service after installation. The department included in addition to a large force of engineers a network of "service shops" throughout the country, each of which was essentially a small manufacturing operation. At the regional level, these functions were removed from the responsibility of the regional manager, where it had formerly been placed.

Thus, these two national sub-organizations relieved the regional sales management of administrative and service responsibility, permitting it to become, in fact, a sales management, devoting energies entirely to selling problems and planning. (This is not to infer that the personnel administration function within the sales units was removed.)

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The remaining sales organization was then organized into three separate sales departments, each with a headquarters operation and a complete field (regional) organization. The separation was based on broad market, or type-of-industry considerations.

1. The "User Industries Sales Department." This department was given responsibility for the sale of all apparatus products and systems to customers who purchased the apparatus for their own plant use. This included customers in such industries as electric utility, steel, automotive, mining, paper, rubber, etc. The General Manager of this department was located at Division Headquarters, reporting to the Division Vice-President. The Department had a headquarters of "general office" organization, with the industry sales and application engineering functions as before; and a regional sales organization.
2. The Components and Intermediate Distribution Department. This department was given responsibility for the sale of all apparatus products and systems to customers who purchased apparatus not for their own use, but for resale. This included customers in such industries as machine tool, pump and compressor, industrial fan and

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blower, etc. It also included responsibility for franchised distributors who resold apparatus to small industrials, contractors, etc. The organization was similar to that of the "user" department, with somewhat less emphasis on application engineering.

3. The Aviation and Defense Industries Department.

This department was given responsibility for the sale of all apparatus products and systems to customers in the aviation, ship-building, and defense industries. Its headquarters and regional organization was similar to the other sales departments.

A simplified, schematic chart of this new Apparatus Sales Division is shown in Figure 13 on the following page. It should be compared with the former structure shown in Figure 12, page 109.

As in the product operating structure, the number of vertical levels from Chief Executive to individual workers was highly compressed: as shown in Figure 14.

The Apparatus Sales structure shown in Figure 13 remained essentially unchanged from 1955 until 1960. It should be noted that in this post-decentralization period; 1955-1960:

1. The Product Departments were now well oriented to their "autonomous" business operations, and

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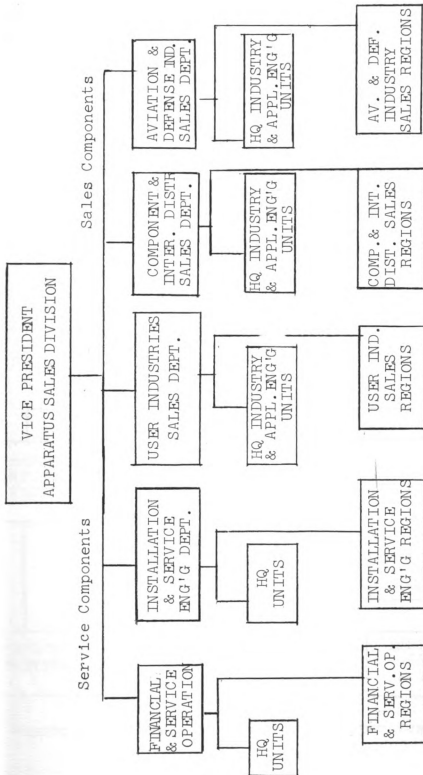
FIELD SALES
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Figure 13. Apparatus Sales Division Organization Structure, 1955 ("Staff" Units and Positions omitted).

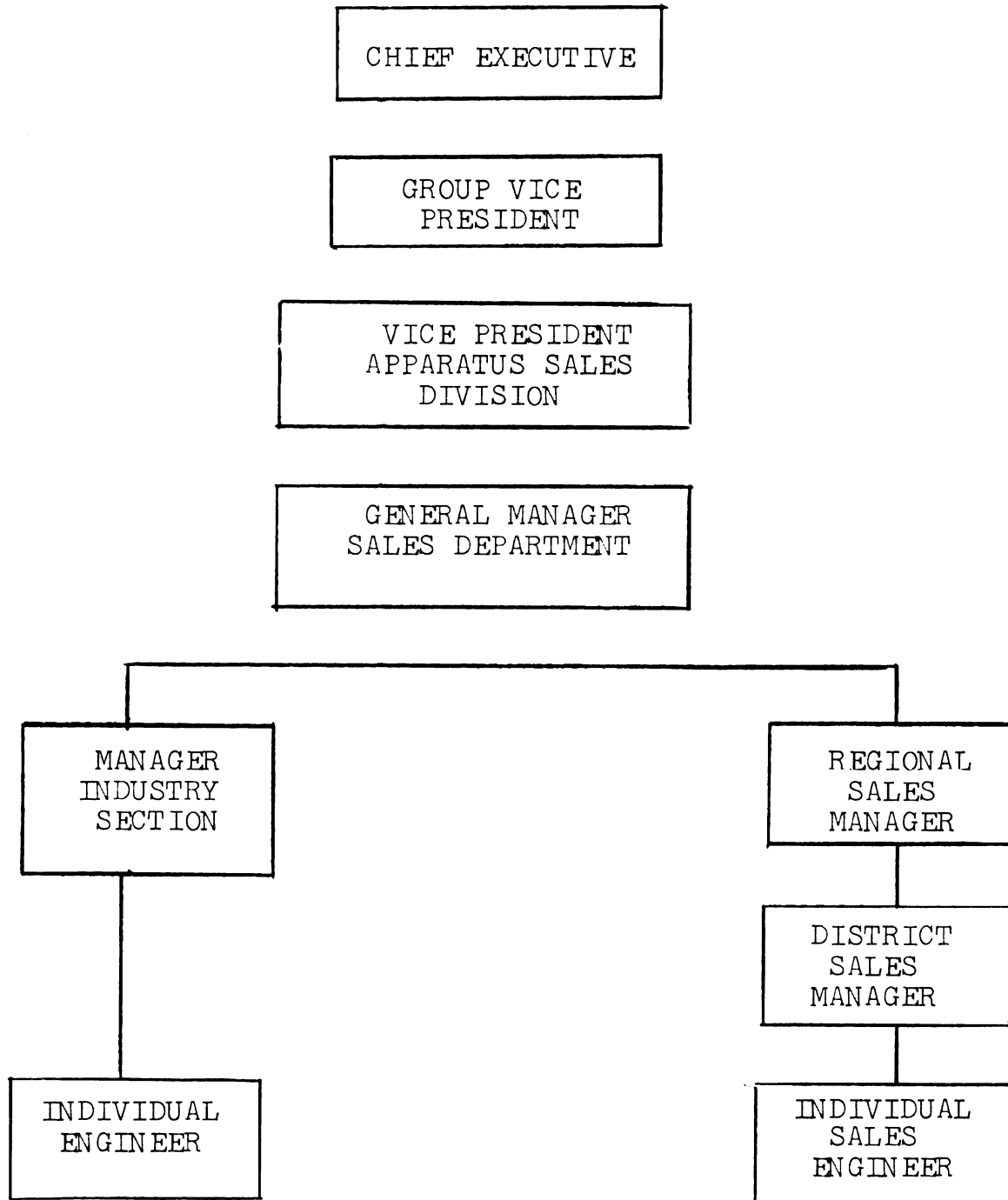


Figure 14.--Levels of Management, Apparatus Sales.

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The system of measurements, evaluating their performances had become highly operational.

2. Whereas the Product Departments were truly market-oriented, each department was so with respect to its product line only. Thus, there was a product-market orientation.
3. Competition in this period was increasing; G. E. market position in many product lines was either at a standstill or was decreasing.
4. Many Product Departments had increased productive capacity beyond current sales volumes, and were operating at less than optimum capacity--with obvious effects on costs and profits.
5. The sales function of the apparatus-type product departments was provided by the Apparatus Sales Division, also an "autonomous" operation over which the Product Departments possessed no formal authority or control.
6. The Apparatus Sales Division with the exception of the 1955 reorganization (which was essentially a management realignment) fundamentally was performing the same field sales tasks as it had been for forty years.
7. Whereas the Apparatus Sales Division was market-oriented, it was also individual-customer

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oriented, rather than purely product-oriented, perceiving as its objective the development of overall relations with each individual customer to enhance the sale of all products, combinations of products, and engineered systems.

Incompatibilities, friction, and ultimately conflict developed between these two interacting organizational groups, or sub-systems--the apparatus-type Product Departments on the one hand, and the Apparatus Sales Division on the other.⁴ The Product Departments were overtly dissatisfied with their relations with Apparatus Sales. Lacking authority to command changes in Apparatus Sales, they indirectly forced change (by processes to be described later).

In 1960, the Apparatus Sales Division again experienced drastic reorganization, this time destroying its identity as an organizational unit (and as a social subsystem). At the risk of over-simplifying somewhat at this point, the reorganization can be described as follows:

1. Product Departments and Divisions by 1960 had been aligned in quite compatible groupings.

⁴It is not the purpose here to describe why this occurred, or what social forces underlay it, or what the real meaning of it became and is still becoming. Here we are only describing the history of change centering on structural change.

For example, the Electric Utility Group consisted of Divisions and Product Departments whose markets were in the electric utility industry. Hence, all organizational parts and functions of Apparatus Sales having to do with the electric utility market were split off, through the Division VP level, and formed into a new sales "division" entitled "Electric Utility Sales Operation," assigned to the Electric Utility Group.

2. Some of the Product Departments in this group produced products for power distribution. Therefore, within the newly formed sales organization, at the District Manager and sales engineer levels, a further organizational differentiation was made, forming some field sales units selling only the power generation products, and other sales units selling only power distribution products.
3. Other Product Departments groups inherited their share, likewise, of "chunks" of the former sales division.
4. This breaking up of the sales division in and the assigning of its parts to different product department groupings resulted in a much higher degree of product specialization. It changed the once large and powerful Apparatus Sales into a number of

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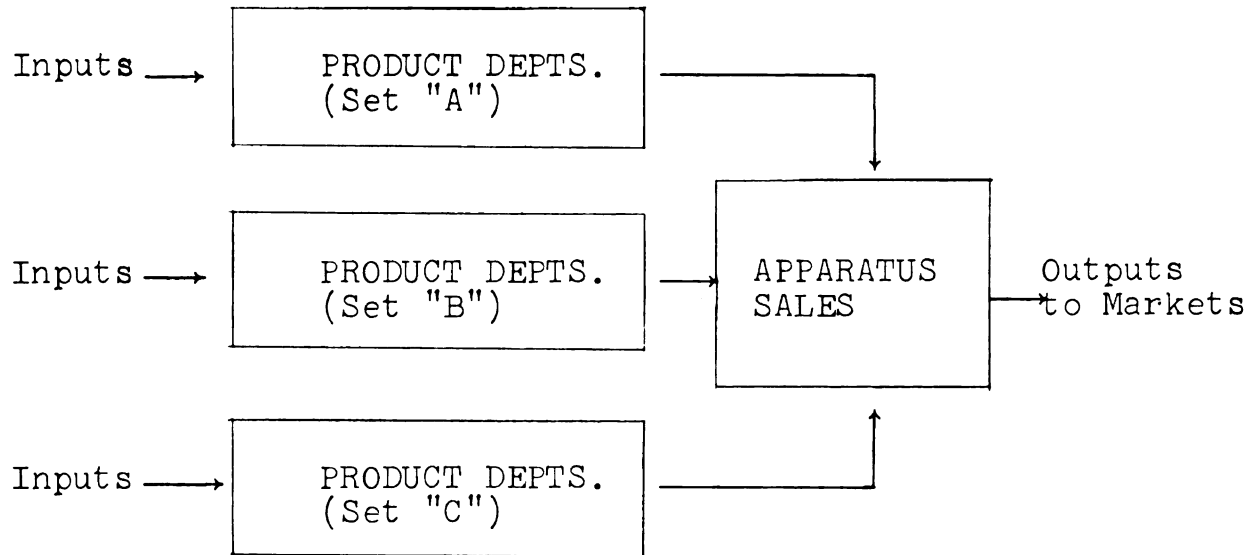
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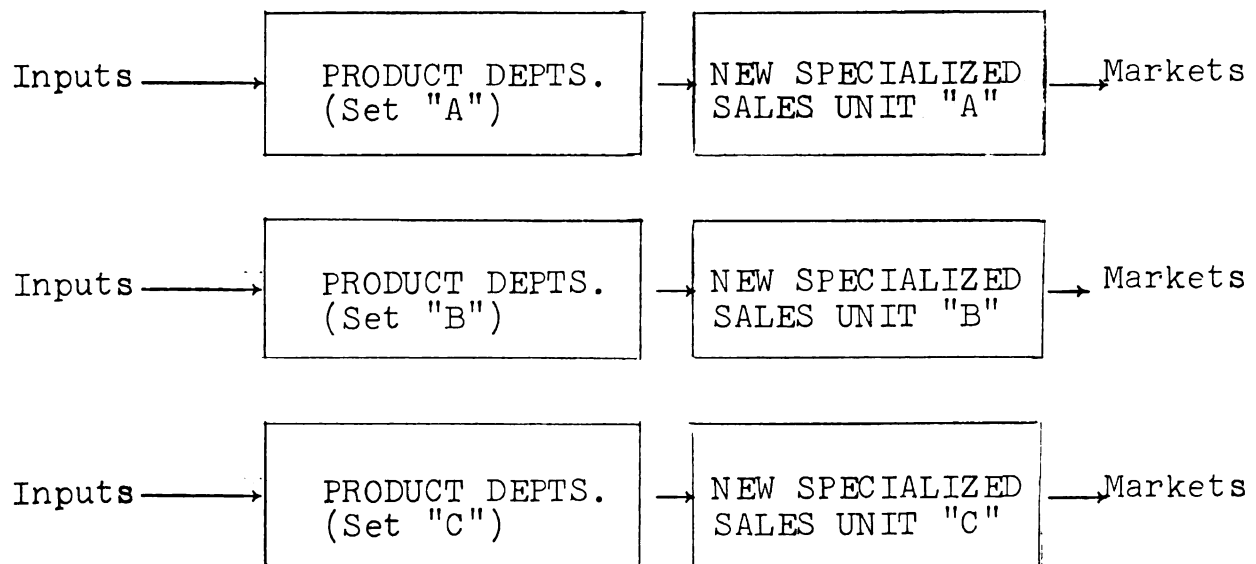
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smaller units, each under the sphere of influence of a few product departments and divisions.

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This still does not give each Product Department General Manager formal and direct authority and control over the field sales function. But, it is a great step closer to that authority and control. Further, it greatly increases the dependency of the sales units on a few specific product departments. Additionally, each of the newly formed "fragments" of Apparatus Sales Division is assigned to the same Group Vice President to whom are assigned the Product Divisions and Departments for which that "fragment" is the sales organization.

Looking back at Figure 9, page 90, we see how the operating management authority and control of this giant corporation is vested in 137 individuals. Until the 1960 reorganization, some 30 or 40 of the product department general managers whose departments accounted for \$2 million in sales had no formal authority over a vital element of their operation--field sales. After the reorganization of 1960, the actual authority and control of these 137 executives have been enhanced. More power was being centered in this management elite.

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CHAPTER IX

THE MORAL ORDER, AND THE BELIEF AND VALUE SYSTEMS (1925-1940)

Introduction

We have described a historical trace of this company from its early beginnings in the latter part of the 19th century, through its early pioneering days, through its period of growth and consolidation, and through the period of the great reorganization and decentralization of the company in the 1950's. We have observed and described how, as early as the late 1920's, executives of the company perceived that the then centralized, functional type of organization was becoming unwieldy and insufficient of adequate management control--thereby placing a limit on the continued growth of the company.

We have also observed and described the perceived needs by executives for reorganization of the company after World War II. These executives forecast during World War II (a forecast later to be validated) that the great technological achievements during the war plus a steadily and rapidly increasing market demand presented the company with opportunity to significantly increase its sales and the opportunity to innovate technologies

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and new products, both in the industrial and in the consumer markets. It was further perceived by the executives that these opportunities could not be realized without significantly changing the organization of the company so that it could flexibly adapt to the predicted rapidly changing external economic, social, and technological environments.

Decentralization of the company was the process by which the executives adjusted the company to meet these changing external environments. The definitive meaning of decentralization in this company was described in Part II. In the company's own words:

The concept of decentralization. . . involves much more than geographical dispersal or product diversification; more than establishing profit responsibility; and more than cutting administrative responsibility down to manageable size. More importantly, decentralization is an attitude of mind by which it is expected that each manager, and likewise each individual contributor, will assume the responsibility for and employ the initiative required to be on his own to the greatest possible extent within the framework and objectives and policies that encompass his position.

Thus, the executives viewed decentralization as something much more than merely a realigning of organization structure. They were well aware that decentralization meant new definitions of roles, new interrelationships of people, new managerial philosophies, and new individual managerial perceptions of the company and of components within the company.

Describing how the executives initiated processes designed to develop new managerial perceptions and philosophies concomitantly with change in organization structure, it will be revealing to examine what the perceptions, attitudes, sentiments, and philosophies of management were prior to decentralization, under the centralized functional type of organization. In Chapter IX, therefore, we will examine and describe the former centralized company as it existed prior to World War II, viewing it as a social system with social structure, identifiable with social usages (or modes of behavior), and social relations. We will propose that roles and role expectations, the status system, the commonly shared sentiments, and the norms of behavior were all deeply rooted in tradition. Hence, in Chapter IX, we will examine the traditions which have been built up in the company for years--traditions which had become socializing processes--traditions which had developed symbolic meaning to individuals carrying with them prescriptions and proscriptions, expectations and sanctions, and the developments of personality organization or orientations to roles. We will describe all this in terms of a number of identifiable variables which apply both to the social structure itself, and also to personality structure, or the sets of personality organization or orientation to managerial roles. This description is based partly upon the writer's observation as a management member

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of the company, but reinforced by documentary evidence and information given by informants during the field research.

Following this, Chapter X will describe the emerging changes resulting from the process of decentralization as they affected the above variables, and the emerging of new role concepts and new personal identifications. Here we will describe the emergence of a "new managerial elite" which had profound influence not merely on organization structure and the totality of the operations of the company, but also on the adaptive and maladaptive adjustment of the individuals to the newly emerging social system.

Chapter X will also describe and attempt to explain the emerging changes in the moral order and in the belief and value systems themselves. Here we shall again describe the changing moral order in terms of the same variables studied in Chapter IX, describing these in terms of their changing symbolic meanings--the evolution of new symbol systems, the erosion of old symbol systems, and the persistence or tenacity of certain symbol systems.

In Chapter XI we shall refer all this to one specific identifiable sub-social system, the Apparatus Sales Division. Here we shall propose that this organizationally independent social system initially existed almost as an island, unaffected directly and internally by the changing

processes brought about by decentralization. We shall view it almost as an anachronistic small society, living its present in terms of the traditions of the past, reinforced by strong symbol systems, and resisting social change.

Chapter XII describes the dilemma and ensuing conflict between the tradition-based Apparatus Sales Division and the emerging social system external to apparatus sales evolving through the process of decentralization. Here we view two separate social systems within the greater system of the corporation itself, independent but interdependent and interacting. Chapter XIII describes the changing power relations between these two systems. It will attempt to explain how the tradition based Apparatus Sales Division resisted change, developed defensive behaviors, and how its managers evolved changing personality orientations. Chapter XIV describes what finally happened as a result of the dilemma and conflict between the two separate social systems, the Products Departments and the Apparatus Sales Division. This has been described structurally previously; here we will attempt to describe it in terms of its social meaning.

Chapter XV will view the social system of the corporation as it is today and attempt to explain the processes for change which are presently built into the system so that even now the company is becoming something

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new. We will attempt to explain how the future, or managerial projections into the future are an integral part of the present, and even now affecting the process of change.

* * * * *

The centralized functional management organizational structure of the company which existed from the early formative days of the company to 1940 has been described. But within this formal structure, what processes were there for enabling the individual, or groups of individuals, or systems of individuals to learn what the company meant, to come to understand what the individual work functions meant, to learn what the managerial positions meant, to learn what was expected of them, to learn the do's and don't's of managerial behavior, to learn how they were to be rewarded? All of this, of course, was learned as it is in any society, through the complex web of structure, norms of behavior, and social relationships, or in terms of a shared value system and shared corporate goals which were congruent with and interacting with personal goals. We shall attempt to describe and explain all this in terms of the social structural characteristics, the processes, and the policies existent during the period of the centralized, functional organization.¹ To do this we will

¹We do this with one eye ahead to the decentralization period of the 1950's, realizing that in the decentralization period, most managers in relatively important positions were men in the age group 50-60, who had entered the company some twenty-five years previously, or in the 1920's (during Swope's era). Or, those in the 40-50 year age group in the 1950's had entered the company in the 1930's (mostly in the post-depression years of 1936-1940), also in the Swope era.

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examine a set of variables which were either knowingly or unknowingly, consciously or unconsciously, under the control of the management but which we hypothesize influenced individuals' patterns of personality orientation and thereby, interacting with certain purely structural variables influenced patterns of managerial behavior. We shall later examine these same variables after decentralization (in Chapter X). These variables are:

1. Entry
2. Early Training
 - a. "TEST" Program
 - b. Business Training Course
 - c. General Course
 - d. Functional Courses
 - e. Social Influences
3. Job Descriptions
4. Individual Performance Ratings
5. Salary Administration
6. Mobility
7. Later Training
 - a. "Island Camps"
 - b. "Elfun"

Entry

The company has always followed the policy of promoting from within. In a few rare cases in which some highly specialized skill was required, an experienced man was hired from the outside, but generally the practice has been, and still is, to recruit the technical and professional work force directly from colleges. For example, the 1961 annual report makes quite a point of the fact that the "average" age of officers and managers at the division general manager level and above was 52.5

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years and the average length of service was 27.6 years. The company has maintained an active and formal recruiting program for professional employees for over forty years. Even in the early 20's, it was one of only a handful of industrial corporations recruiting engineering and business or financial graduates at colleges throughout the country. The recruiting program was largely vested in two men, one recruiting engineers designated to ultimately fill technical and managerial positions in the functions of engineering, manufacturing, and sales; and one recruiting business or financial graduates, designated to fill the accounting and financial positions in that function of the company.

The criteria for hiring were highly demanding, including high scholastic achievement, "dynamic and outgoing" personality, evidence of conceptual ability, and a balanced interest in extracurricular activities. One manager of the company who had become involved in extracurricular recruiting activities after World War II, when such activities had become much more involved, reflected as follows about the recruiting process in the 20's and 30's:

The recruiters in the early days did a fantastic job. Of course at that time the company was one of a very few actively visiting college campuses, and its recruiters visited the major colleges at least twice and sometimes three times a year. Further, even in the years when very few men were being hired--such as the early 1930's--the company continued its visitation of the campuses. This, of course, was highly welcomed by the engineering and business faculties and created, I think, a very strong image of the company. As a result, the faculties came to

know what kind of men the company sought and, therefore, actually helped in the selection process by recommending students of the general characteristics looked for by the company. For example, Mr. -----, who recruited at my campus and offered me a job with the company, later told me that based on recommendations of my professors he had already tentatively selected me even before I came in for my interview. I would say that the graduating seniors on my campus had a very clear picture of the company and its programs, and its opportunities.²

The company recruited broadly, in a geographic sense. Each year it hired engineers and business trainees from all sections of the country. It is true that some universities provided many more graduates than some others, but there was no clear geographic pattern in this. For example, by the mid-1930's, Cornell University, Purdue University, and Iowa State College all ranked very high in number of graduates in the company-schools drawing students from widely different geographical and even social backgrounds.

But there were a number of common characteristics in the college graduates hired by the company, because of the criteria for selection. One manager thinking back about his early training days remarked:

One thing that appealed to me in those days was the fact that I was associated with young men who were very much like myself. I don't mean to infer any degree of conformity at all. As a matter of fact, I think that our particular group had quite a few non-conformists in it such as (here the informant named several individuals who later reached high

²The quoted statements by informants in this and following chapters were all made to the writer in the field research conducted in 1962.



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executive positions in the company). What I mean is that, we all had ambition, pretty high level of intelligence, the same basic technical background. It was a fine bunch of people.

The rate of hiring was fairly stable during the mid-1920's to late 1920's. In 1930, however, because of the great depression, essentially no new men were hired for a period of about five years. In fact, during that period, 1930-1935, many of the younger men who had been hired in the late 20's were "furloughed" because of lack of work; most of these men did finally return to the company, but some did not, so that during the years 1930-1935 there was not only essentially no hiring but a small net loss of professional people. This resulted in a gap which later resulted in sharply increased rate of upward mobility, particularly after World War II and during the early days of decentralization during which time the company was rapidly expanding. With the upturn of business in the mid-1930's, the company again began hiring at a relatively high rate. About 400 engineers were hired in 1936, 500 in 1937.

Throughout the 1920's and 1930's, the young college graduates, both engineers and business graduates, reported for work at one of the major plant cities and were placed in a training "pool." For approximately the first year of training in the company, the young trainees were to remain in this "pool," the engineers in the "test" program, and the business trainees in "Business Training course,"

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commonly referred to as "B. T. C." Each of these programs, to be described in somewhat more detail below, consisted of job-rotational assignments together with formal class work.

Early Training

The "TEST" program.--All engineering trainees were placed on the "Test" program. This involved actual working assignments in the factory, testing large electrical apparatus. Much of the company's large apparatus was "custom built" to individual specifications. Such equipment included steam turbines, large motors and generators, large transformers, etc. After these large machines or apparatus had been built they were assembled and erected by factory personnel, and a specified set of engineering tests were then made on the equipment by the "test engineers."

The normal test assignment for each individual lasted for three months. He was then moved to the testing department of another factory, sometimes in the same plant city, and sometimes in another city, usually with a degree of choice in these assignments. The majority of the assignments were in the company's largest plant city in Schenectady, New York, although there were also test assignments in such plant cities as Lynn, Massachusetts, Philadelphia and Erie, Pennsylvania, Pittsfield, Massachusetts, and Fort Wayne, Indiana. At the conclusion of each three month

assignment, the trainee if he wished, and if he were so chosen by the company, could remain for an additional six month assignment as a supervisor of that specific test. In the parlance of the company, he "signed up"--hence, such supervisory positions were known throughout the company as "sign ups." Thus, as a new man came into a test assignment he found that he was given instruction and supervision by a young engineer who had been in the company only a short time longer than he.

For the great majority of young engineers, this was the first experience actually working in a factory. These were factory jobs; the test engineers punched a time clock, were paid on an hourly basis, carried their lunches, etc. Yet they were clearly a group apart, so regarding themselves, and so regarded by factory personnel. Although the majority of the trainees began at the outset to aspire to their first assignment "off" test at the end of a year, the great majority of them found this "test" experience exciting. They were working with large, complex apparatus highly technical in character and often with selling prices in the hundreds of thousands of dollars. Further, these were responsible jobs giving the trainee a taste of job responsibility very early in his career. The test engineers had the final say regarding whether or not the apparatus had been built to specifications; if in the judgment of the test engineer the apparatus failed to

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meet these specifications, it was not shipped and was returned to the factory for correction. They were responsible, therefore, for quality of performance in operation.

Each of the test assignments (there were perhaps twenty-five or thirty throughout the plant cities mentioned above) developed a reputation for itself. Some test assignments were more popular than others; some were regarded more exciting than others because of the size, power specifications, and operation of the equipment. Within a few weeks after entry into the program, the new trainees began to "compare notes" with other test engineers regarding the desirability or undesirability of other test assignments.

A distinct camaraderie developed among test engineers, due in part to the relatively common backgrounds and common personality patterns of the young trainees. But it was also due to the high status of the test program within the company and outside the company. Essentially all of the technical people in the company had themselves been graduated from this program and regarded it with affection. To this day older men in the company speak nostalgically of their early "test" experience. As one Vice President of the company remarked:

The test program certainly did something for people. It gave a background of technical experience, but

more importantly was a common denominator for all people. It certainly made men feel much closer to one another. After all, when you gather together young engineers from all parts of the country, from all schools, and put them in a common group in their first work experience, it was bound to develop a close and lasting relationship between these men."

Another manager, presently a regional sales executive, when asked about his early impressions of the company replied:

I went through a series of test assignments and then to the departmental plan, going into engineering first, and then to commercial in "Building Number Two." I don't remember too well what my first impressions were except that I felt that the company and had great consideration and feeling for its employees. It was a wonderful group of men, highly competent, and attractive to me. There was a wonderful family feeling. I was very proud of the company and very proud to be associated with it.

One of the great advantages of the test program to the trainee was the opportunity to get a "feel" of the company and do some personal exploring during his first months on the program before he had to make a specific choice of a career assignment into manufacturing, engineering, or sales. All test engineers were hired only for the test program without specific designation as to type of functional work to be performed at the end of the first year's program. As described by a manager in the company who is responsible at a high level for personnel development:

Before World War II we made quite a point about the fact that a young man from college could come with the company, enter the initial test program, and have a period of waiting and exploration before

he had to make up his mind whether to make the choice between an engineering career or a commercial career. From the viewpoint of the trainee there were definite advantages to this system. There is ample evidence to indicate that many young men who came with the company came with the company came with a preconceived notion of what they wanted to do as a career, but after having a chance to look around the company a bit found other avenues more attractive.

The exploration was made easy for the trainees. They were encouraged to interview managers in all the functions, manufacturing, engineering, and sales in each of the plant cities in which they received assignments. These executives without exception always made themselves available for interviews and a number of informants have indicated how consistent management people were in the 1920's and 1930's in their regard for the young trainees and the time they were willing to spend with them. Of course, there was another side to this coin; managers in each of the functions were anxious to "sell" their functions to the trainees realizing that future manpower availability for their specific functions came from this training pool. In a sense, the functions were in competition one with the other for the young engineers in this pool. But the significant thing is that the young trainee quickly got a birdseye view of the apparatus component of the company, a feeling of camaraderie among his fellows, and by virtue of intimate contact with management people a feeling of being a junior member, but a member nonetheless of a professional fraternity.

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Normally, about six months after his entry, the trainee made a decision on the functional career he wished to follow at the conclusion of his year's test assignment. At this time he then applied for admission into the specialized training program for that function, a process which will be described below.

Business training course.--The business and financial trainees embarked upon a rotational training program very much similar to the test program, except that their three month working assignments were in various accounting sections. Like the test engineers, they were given a relatively high degree of responsibility at the outset and performed working jobs in accounting or finance requiring knowledge and judgment.

In the case of the business training course, the end career had already been chosen and trainees embarked immediately upon a functional training program in addition to the job assignments. They attended classes covering various advanced phases of accounting and financial management. The aspiration of these trainees was to be appointed to the "traveling auditors staff" at the conclusion of the training program.

The general course.--All test engineers, even prior to career decisions, were required to enroll in the "General Course," a set of classes which met twice a week,

one meeting devoted to advanced engineering application study and the other devoted to a history of the company, a description by the respective managements of the various functions of the company (accounting, engineering, manufacturing, sales, advertising and sales promotion, etc.). These classes involved outside study for which the trainees frequently met together in groups, further reinforcing the camaraderie and also, more significantly, reinforcing the shared perceptions of the various facets of the company.

The functional courses.--The test engineers electing to continue with design engineering as a career applied for entrance into the "Advanced Engineering Program." This was highly competitive, with only a few candidates being selected each year. Selection was made on the basis of written technical examinations. Upon acceptance into the program, the trainee was removed from the test program and again began a series of rotational assignments, this time of greater duration and in design engineering departments. Simultaneously, he was enrolled in courses in engineering and pure science given by outstanding technical men in the company. This advanced engineering program was regarded at the time as far surpassing any engineering or scientific doctoral program in any technical university in the country.

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Trainees electing to follow commercial or sales engineering work as a career applied for entrance into the "Sales Training Program." This also was competitive, with selections being made after a series of interviews with eight to ten high level sales managers. After selection into the program, the sales trainee continued his test assignments but immediately began a program of course work under the administration of the "Sales Training Department." Courses included salesmanship, business letter writing, effective speaking, product applications, etc. There was considerable ritual connected with this program; announcements of acceptance into the program were made at dinner meetings held at a local country club attended by top executives of the sales organization; the class rooms used for the sales training courses were designed with the decor of a board room; classes were visited by sales executives; instructors of classes were well known sales managers; etc. A high esprit-de-corps quickly built up among the selected trainees. A sales executive of the company, reminiscing about his first year in the sales training program in the middle 1930's stated:

The whole sales course was superbly presented and developed a very close personal relationship with associates. I remember we talked about very little over our cups of coffee and occasional beers other than the sales training program itself. The men in this particular group of mine were designated later to become product department marketing managers, general managers, regional sales managers, and division vice presidents. Even to this day to meet with one of these men over a martini is to signal a nostalgic "remember when" conversation.

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Other social influences.--The test engineers and the business training trainees were bound together by day with common work experiences reinforced by the traditions of the various programs. After progressing from the earlier training days into one of the functional training programs this common binding together of people increased. But there were other social influences during the first year or two of experience with the company which even further bound men to their respective groups.

The living situation in the plant cities had a strong integrating influence. As one executive recalls:

In those days (he is referring to the middle 1930's) a large percentage of the young men coming to work in Schenectady were not married. I should imagine that most of them spent six to nine months before marriage, during which time many lived in a sort of cooperative arrangement--renting a house, hiring a housekeeper and setting up shop much like a fraternity house on campus. These "houses" had fascinating names, such as "The Nudist Colony," "Pesting House," etc. They led a gay life. I can remember just the other day chuckling with one of my old friends about the day we had the big party at "The Nudist Colony" when we made milk punch in the bath tub.

Those young men who were married banded together with young couples of the same vintage and usually in the same functional training program. Close social friendships developed; these men were all "birds of a feather" with common interests, common educational background, and common objectives. The wives, too, had much in common; most were college women and they, too, banded together. As recalled by one manager:

We all made about the same amount of money with nothing to spare at the end of the week for any entertaining other than dessert and bridge and an occasional bottle of beer. It was a most interesting group of people; there were competent young men and their inevitably attractive wives from all parts of the country dumped into a melting pot. My wife and I still trace some of our dearest friendships of the present back to those early days in Schenectady when we were making \$30.00 a week on the old sales training program.

Although the company plants were located in large urban centers, the young trainees and their wives rarely entered into the social activities of the plant cities. Of course, most of these young men had a "transient" feeling, knowing that within a matter of months they would be assigned elsewhere in the company. This further tended to group them socially. In each plant city the company had a country club or similar facilities which were made available to young trainees with dues subsidized by the company in the first year and partially subsidized for the year or two thereafter. These clubs were the center of many social activities for the young engineering and financial trainees and their wives.

Summary

Entry into a large, widespread, and highly technical company could well have been a complex if not confusing experience. This was minimized by the bringing in of young college graduates with only the labels "engineers" or "business" trainees. Because the trainees were not

immediately placed into functional job assignments but rather were given responsible work assignments in a "pool" arrangement delaying the functional-career decision for at least six months, the young members of the organization quickly developed an awareness, an image of the whole company. Interviews with men with 20 years or more of experience with the company validate the statement that an intense loyalty to the company was developed in these formative first months. Further, because of the ease of access by these young men to the management personnel of the company, a great respect and high degree of loyalty to management people was quickly developed; this statement also tends to be validated by interviews.

The clear definitions of the various functional activities of the company, definitively presented to the trainees at the outset of their general training program, plus the rituals and the traditions of the functional training programs themselves quickly developed individual identifications with these functional components of the organization. Roles and role expectations were formed early; to say simply, "I am in apparatus sales" quite clearly defined the role without further elaboration.

Thus, at the very beginning of the individual's career with the company, he engaged in tradition-based activities

which provided symbolic meaning to him. As we shall emphasize even further when we discuss job descriptions, personnel evaluation, etc., a web of symbol systems provided meanings to the individual--the meaning of the company, the meaning of management, the meaning of his function and the meaning of his job.

Job Descriptions

Formal job descriptions were essentially nonexistent in the centralized functional organization of the 1920's and 1930's. This is not to say that individuals did not understand what their jobs were or what was expected of them in the performance of these jobs. It is to say that there was no formal mechanism by which the job was definitively, verbally spelled out. Role expectations were traditionally generated and passed on, as it were, from "generation to generation." Through the working of the symbol systems of the company and the symbol systems of each of the vertical hierarchies. understandings and perceptions of positions "came to be" in a number of ways. First, the individual observed his superior and how his superior functioned in his position. Second, there was a very close manager-subordinate personal relationship. Part of the expectation which had developed traditionally in the manager's job revolved about the training and development of people, not in a formal sense, but rather in a

sense of obligation. Hence, managers quite generally throughout the company regarded development of the individual as an important part of the managerial job. Much of this was done under the general approach of "giving the individual a full measure of responsibility and letting him develop himself in his job." This is evidenced from the responsibility given to trainees in the early days and can be noted in reports by management of their training techniques. This is exemplified in a speech given by a vice president of the company to the American Institute of Electrical Engineers at their annual meeting in 1942, a part of which appears below:³

The Engineering organization of a large industrial business is based on a number of principles:

1. Directness of action and freedom of action without conflict.
2. The engineering organization must be part of the total business.
3. The form of the organization must be subordinate to its personnel and must shape to the qualifications of men.
4. The organization needs a small central staff.
5. The organization needs supporting committees.
6. The organization needs manpower strength with runner-ups, with education, to cultivate and exemplify loyalty spirit and moral.
7. The traditions of the engineering organization must act as a catalyst for such spirit and moral.

Note particularly the emphasis this vice president placed, in 1942, on the shaping of organization to the qualifications of men--typical of the managerial ideology in the company at that time. Note also the emphasis placed

³Underlining added.

on education to cultivate and exemplify loyalty and spirit. This typifies the executive philosophy which influenced training of people and the shaping of organization (and hence jobs) to men, rather than the other way around.

Other managers speak of the development of the understanding and perception of jobs without formal job descriptions. One sales executive, for example, commented:

I had had over twenty years of experience in the company and a job paying over \$25,000 a year before I ever had any written description of my job given me by a superior.

A vice president of the company stated:

No one ever spelled out any management job to me. Of course, we now have job descriptions on many jobs but I think in many cases there's quite a bit of latitude in them.

When asked how he learned what was expected of him and what he was to do in a new position as he progressed in the company, a high level sales executive commented:

We simply learned by experience. There were no specific ways in which we were taught how to do certain jobs. We were pretty much left on our own. Whenever a man took a new job he learned, of course, how the job had been done before and deduced from this how he was to perform. There were certain traditions for various types of jobs but they were informal in character. I can't put my finger on it exactly. I simply know that in a new job I would more or less automatically come to know what was expected of me.

When asked how he learned what the requirements of his first field job which he had acquired in the late 1920's were, another sales executive said that there was no formal training or explanation of what was to be done in the sales job.

It was simply a matter of working in the office with older sales engineers and learning in that way.

Still another sales executive remarked as follows:

Even as late as the middle 1950's there was inadequate formal description of positions. This may have been all right prior to the 1955 organization change. But I found myself in a new job which had never existed before and my colleagues in other regions found this very frustrating in that we could not get an all-inclusive description of this kind of job.

Summary

Individuals learned about their jobs and what was expected of them not by a formal, rational, and objective process, but through the symbolic means of traditions about jobs on which there was a high degree of consensus.

Individual Performance Ratings

Prior to decentralization there were methods for rating the performance of employees, but these varied widely from component to component even within the vertical functional hierarchies. One executive formerly with apparatus sales described the rating system within that component as follows:

There were really three ways in which we rated sales people. First was in the salary itself. If we could keep salary increases coming along fairly frequently, that in itself indicated to the individual that he was doing a good job. But then there was a formal rating system which consisted of a rating sheet on which the individual was rated in a number of categories, primarily personality trait kinds of things. For each of a number of traits he was rated on a scale of excellent to poor, and then was given a final overall rating of effectiveness on the job and

potential for advancement. Strictly speaking, each individual was supposed to be rated by this method once each year after being appointed to a new position for three years, and then at least once every three years thereafter. The manager himself did not necessarily make the rating. Rating sheets were given to three individuals who were supposed to know the ratee and the manager was then supposed to discuss a composite of these three ratings with the ratee. I would say that only lip service was given to this rating method. Then there was another private and supposedly secret rating of individuals which the manager made but did not discuss with them. This took two forms. One was the submission to his higher headquarters of the list of younger men in the organization who had promise of growth. This was known as the "promising young man list." Also there was another form for each employee which was submitted to higher headquarters which rated each man on a number scale from two to ten, ten being outstanding, on two points: present performance and potential for the future. This was an important rating because at times of salary reviews the "number" rating of the man often determined his eligibility for salary increase.

As late as the early 1950's, an employee attitude survey conducted throughout the entire apparatus sales organization evidenced the fact that the great majority of professional people in this organization had not received a formal discussion of performance evaluation from their superiors in many years.

In defense of the lack or inadequacy of a formal, consistent rating system, one executive stated:

Of course, performance rating was done rather perfunctorily prior to decentralization. But after all, one can hardly blame management of that time. After all, we knew little about measurements then, and how can one adequately rate an individual in a job without having standards or criteria which provide objective quantitative measurement of his performance?

But we can conjecture here that although the individual did not often, prior to decentralization, receive formal evaluations of his performance from his superior, he did perceive that he was performing capably by the very virtue of the fact that he was in a position the behavior patterns of which were set by tradition, and he was following the tradition. In fact, many individuals equated their membership in components with success. That is to say, for an individual to state, "I am in apparatus sales" implicitly meant that he was in an organization of great prestige and confidence, that he was following the traditions of this great organization, and that, ergo, he was successfully performing his role. In fact, we conjecture that the very absence of a consistent formal performance rating system, coupled with the high esprit-de-corps which went with being a member of the corporation, was in itself a significant symbolic input into the web of symbol systems revolving about positions, man to man and group to group relationships, and behaviors.

Salary Administration

Closely allied with the variables of job descriptions and performance ratings is the system of salary administration. Later we will show that after decentralization all these variables were formally tied together. During the period of the centralized organization, however, these

related variables were not in fact interrelated in the management process or in the minds of individuals.

As with performance evaluation, there was no single salary administration plan or process which was uniform throughout the company. True, there were some general ground rules that had been laid down in the executive office but each function, and components within each function implemented salary administration quite differently. In the sales organization, for example, managers down to the level of section managers at general office headquarters and district managers in the field organization conducted "salary reviews" at least once yearly at which time they recommended to higher headquarters in the sales organization what salary recommendations they requested, by individual. The "ground rules" for these reviews changed from time to time. Often, for example, rather than initiate the salary review, the manager received instructions from higher headquarters with specific requirements for the review. For example, a particular salary review may have dictated that only men with the rating 9.0 were eligible for salary increase at this time; further, no man was eligible for a salary increase if he had had an increase the year before; and further, only men in certain salary brackets were eligible for the salary increase at this time. In most cases the manager's hands were completely tied by the restrictions and requirements of the salary reviews. Frequently he felt

that a certain individual had earned a salary increase but was unable to secure it for him. Both the mechanics of the salary review and the philosophy which underlay it tended to "spread around" the additional salary money when it did become available.

Although generally speaking the mechanics of the salary review were not discussed with individual professional employees, it was pretty well known throughout the organization how the system worked. It was also quite well understood by individuals that once meeting the requirements of this salary review, the discretion of the individual's manager was all important.

Speaking of the salary administration, together with the system of performance evaluation, one executive of the company who has for many years been closely involved with personnel management commented:

Salary administration was difficult prior to decentralization because there really was no pervasive and rational method of compensation and rating at that time. Much was left to the discretion of the individual manager. You see, in those days the idea was that we paid men. Now, of course, the idea is we do not pay men, but rather evaluate jobs and attempt to set limits on the value of that specific job to the company. Formerly, the appraisal and his resulting compensation were based almost entirely on subjective factors and, of course, these subjective factors varied from manager to manager. There was no common denominator in appraisal and compensation. As a matter of fact, the result was, there was a tendency for sales management to rate all of their people rather uniformly "excellent." That rating system didn't really mean very much. And as I said, there was great variation in the individual benchmarks used by individual managers.

Another sales executive in recounting his first experience with a salary review commented:

I received my first management position in 1948. The first time thereafter that I participated in a salary review, my immediate superior who had formerly been in that position told me how he had maneuvered the salary situation in the past. He explained to me that there was never quite enough money to go around and that he had always tried to parcel it out in the most equitable fashion possible. But there was no specific set of criteria by which we did this, and this disturbed me very much. I knew, of course, that some of my people were really considerably more valuable, yet the salary spread between the outstanding men and the average men was really quite small. Further, salary levels in general were not very high in those days when the post-war inflation had already taken effect. Consequently, in the salary reviews, if anything, we were trying to inch up the men in the lower brackets, at the expense of the men who really were our best performers. I think the one thing that worried me more than anything else after getting this first management job was the fear that one of my better men would someday come into my office and demand an accounting--and I knew I really couldn't give it to him. And this was doubly difficult in those days because we had no objective measurements of jobs at all and no way to point out to a man specifically why he did or did not receive a salary increase. As a result I found myself doing what I observed the other managers doing--I did my best to convey to my people the impression that the salary methods were really something completely out of my control but that I was constantly doing my best for my people trying to get additional money for them.

Summary

The methods of early training, the process by which individuals oriented to jobs, the traditional rather than rational and objective development of expectations of jobs, the personnel rating system, and the salary administration methods were all inputs into the symbol systems. We are hypothesizing that the meanings of all these processes tended

to develop a symbolic meaning of the manager's job. Individuals identified not, however, with the manager's job, but rather with the manager himself. There was a strong manager-worker relationship, a hierarchy of people rather than a job to job relationship, in a hierarchy of definitive positions.

Mobility

Prior to World War II and under the former centralized functional organization structure, mobility was essentially entirely upward within the respective functional hierarchy. It was an extremely rare case for an individual to receive a promotion outside his functional hierarchy. Hence, engineers were promoted within the engineering component, sales people were promoted within a sales component, and manufacturing people with the manufacturing component.

Further, even within the substructures of the several hierarchies, mobility was upward through the specialized subcomponents. That is, a motor design engineer was promoted up through the motor designing function and only in rare cases did he receive a promotion in another product design department.

The rate of mobility relative to that which it achieved after World War II was low. There was relatively little "turn over" in the higher management positions, and an unusually low "quit-rate." It was not at all uncommon

for an individual to be an incumbent in a position for ten years or more.

All this, of course, reinforced the identification of individuals with their functions, that is, with the vertical hierarchies. Further, the relative stability of the organization reinforced the traditions and all the symbol systems revolving about positions, components, and functions.

Of course, during the 1920's as the number of product lines increased, new positions were created. As a new line of products was developed engineering, manufacturing, and sales components were formed to design, produce, and market these new product lines. However, these were "horizontal" shifts and although they did create new positions and, hence, provided a degree of mobility, the concepts of the positions were identical with those of analogous product lines. In the early years of the 1930's, however, the effects of the great depression greatly retarded this relatively slow rate of mobility effectively bringing it to a standstill. Even when business picked up in the late 1930's, mobility was affected more by retirement than any other single factor.

Thus, we are hypothesizing that the vertical hierarchies were highly provincial and parochial in character. Engineers were engineers, upward mobility was within the engineering ranks, engineers perceived their managerial careers within engineering, and that was that. Further,

the subcomponents within these vertical hierarchies were provincial and parochial in character; Fort Wayne engineers identified themselves with "Fort Wayne engineers," Pittsfield engineers identified themselves as "Pittsfield engineers," etc. Likewise within sales, in the general office, industrial general office personnel identified with that subfunction; regional sales people identified with their individual regions. In essentially all cases there was a strong emotional attachment to the parochial components; and intense pride and sense of belonging developed for that vertical hierarchy and the subcomponents within it.

Later Training

The "early training" normally lasted for approximately three years. For example, the sales trainee normally spent one year in the test program, beginning his sales training courses late in that year. In the second year he was usually transferred either to a commercial product section in general office headquarters, or sometimes to an engineering department, purely for technical training. His course work continued during his second year. In the third year he was normally assigned to one of the general office commercial sections where he was given responsibilities in such work functions as pricing, developing multiproduct propositions, providing liaison

between field sales and engineering departments, etc. At the end of this third year he had made a choice for his longer career--either continuing in general office sales headquarters, or moving to one of the regional sales operations. Once he had made this decision, he expected to follow that career for almost the balance of his professional life.

But after this "early training," there was little additional training. To be sure, there were always product and application engineering meetings. But there was essentially no training for management, in a formal sense.

In an informal sense, however, there were two activities in the company which deserve special attention because of their influence on perceptions of the managerial positions and also because of their strong reinforcement of the traditionally based symbol systems. These were the "Island Camps" and the "Elfun Society."

The island camps.--As mentioned in an earlier chapter the company had acquired an island in Lake Ontario near the head waters of the St. Lawrence River. This island had been equipped as a summer meeting place and beginning about the mid-1920's was used each summer for the purpose of assembling managers above a certain level.

The facilities at the Island were relatively simple. The housing units were tents on board flooring spread in a

semi-circle around a large parade ground or central campus. Each tent housed two men and there were facilities for approximately two hundred individuals at one time. A large central dining hall, an assembly auditorium, a recreation building (affectionately known as the "Black Cat"), and service buildings provided adequate but by no means "plush" facilities. The Island quickly became a most evocative symbol. Merely to be invited to attend an Island meeting was equated with success. It was, together with membership in the Elfun Society, the most evocative status symbol in the company.

The Island meetings were conducted with great ceremony and ritual. The top executives of the company were always in attendance; ties and coats were forbidden; everyone was on a "first name" basis. When arriving attendees disembarked at the docks they were met by a small band playing music composed for the Island; a reception line of company executives greeted the newcomers; a holiday spirit was carefully contrived. After sunset on the first night of each camp meeting, a ceremony was held underneath a large elm tree, known throughout the management ranks as simply "THE ELM," during which company executives spoke to the new comers to the Island (always known as the "rookies"), speaking of the greatness of the company and charging the "rookie" managers with the responsibility of carrying on the great traditions of the company. All this was done

with colored lights, background music, and always culminated with the appearance of an Indian in full battle regalia paddling to the shore of the Island, disembarking and giving a sentiment-charged speech.

The Island meetings usually lasted three days with business sessions in the morning and recreation in the afternoon. Normally there was a short business meeting after dinner with guest speakers from outside the company--noted industrialists, bankers, university presidents, etc.

Most of the Island meetings were held by function. There was a "camp commercial" attended by the sales management, a camp engineering attended by engineering management, etc. Usually there was one camp session during the summer as "Camp General" which was attended by the very top management of all the functions. But the Island meetings were oriented to the parochial, vertical hierarchies.

All these meetings were charged with emotion. To this day, management in the company speak of the Island with great sentiment. A vice president of the company, for example, recently stated:

The Island was simply great. It provided a tremendous appeal to management people. I think it was a mistake on the company's part to abandon it. The management meetings being held now are not substitutes for the old Island. At the Island there was a feeling of esprit-de-corps. It gave management people an emotional feeling, a feeling of G. E.'s image and a feeling of G. E.'s greatness. Management's meetings today are held with some specific problem in mind such as the profit situation, etc. The Island on the other hand had its meeting focused on the traditions of the company themselves.

A regional sales executive had this to say about the Island:

The Island meetings were wonderful not only from a personal viewpoint, that is, I confess to a great deal of emotional thrill about the Island--but they were also extremely valuable as far as the total organization was concerned. The Island helped to extend the spirit and the integrity and the pride of the company from generation to generation. Actually, I think we need that sort of thing more now than we ever have and I think we suffered a very definite loss when the Island meetings were discontinued.

A retired executive of the company who still maintains intimate contact with the company today commented that the loss of the great "old traditions" because of decentralization was in his opinion detrimental to the company. He spoke of the Island as a tradition which was highly valuable to management people in the company because it bound these people together with a common spirit, and a common respect and love for the company. He stated that "there should be a sort of renaissance in the company, once more focusing on the individual and on the 'soul' of the company."

The Island meetings did more than simply provide evocative symbolic meanings to management people. The meetings were structured to provide a free interchange of management thinking, and there is ample evidence that the comments, proposals, and criticisms voiced by management people at the Island meetings were contemplated seriously by the company executives. The Island meetings provided two way communication from top executives to other management people, and many of the "great ideas" which later came to fruition were born at the Island.

The Elfund Society.--During an Island meeting in 1929, the chief executive of the company proposed the formation of a group of management personnel in the company which was destined to have great impact on managerial thinking for the next twenty years. The overt reason for the formation of this management "association" was to provide a means for the managers above a certain level to make investments on a personal basis through a trust fund or investment fund which would be administered at essentially no cost by company officials. Hence, the name "Elfund," a contraction of the term "Electrical Fund." But this Society quickly became something more than that. The chief executive encouraged the development of this extra-company management group into a powerful informal management policy making body. Perhaps one thousand managers throughout the company held the rank and stature making them eligible for entry into the Society. Local Elfund "chapters" were established at all the plant cities, and throughout all the sales regions of the company. These local chapters met monthly for the purpose of discussing management problems within the company generally. Each chapter developed "projects" for study; suggestions for changes in management policy were forwarded to the chief executive. The chief executive at one time called the Elfund Society "my informal board of directors."



Here again, powerful symbolic meaning built up around the Elfun Society. To be an "Elfun" meant status, recognition and provided to the individual a feeling of participation in management policy making. Elfun did another thing, too; it began to integrate management thinking across the functional vertical hierarchial barriers. The local monthly meetings in each of the chapters were attended by managers of all functions in that location. To be sure, at the monthly meetings the sales people usually had their cocktails with other sales people, and there was a definite tendency for managers of like jobs to hang together. Nevertheless, the extracurricular management projects studied by the various Elfun chapters were made by study committees composed of managers from various functions. For example, one regional sales manager described one of his own activities in the Elfun chapter located in a large Midwestern city as follows:

I think it was along about 1948 when I was appointed by our chapter chairman to head up a committee to study a new proposed hospitalization and insurance program purely for Elfun members. I remember that I was the only apparatus sales member of that committee which included managers from ----- Department, and ----- Department. It was very meaningful to me to work with these people and I will frankly admit that it broadened my view of the company beyond the narrow confines of Apparatus Sales to which I was personally so much devoted.

Summary

In this chapter we have examined a number of variables having impact on social structure, modes of behavior, and

social relationships. Also, we have presented evidence from informants indicating that these variables were symbolic in character, and helped to develop a web of symbols providing meanings to managerial and professional personnel, and providing the superstructure of shared sentiments about the company, work groups, and jobs. In the following chapter we shall examine these same variables operant in the decentralization period of 1950-1955, and their influence in the process of change of the entire social-system, as well as merely the formal organization structure.

CHAPTER X

EMERGING CHANGES IN THE MORAL ORDER AND THE BELIEF AND VALUE SYSTEMS 1950-1955

As discussed in Chapter VI, decentralization was the process selected by company executives for adjustment of the company to changing technological, economic, and social external conditions. That chapter also described the concept of decentralization as something more than physical or structural decentralization; it was also a new managerial philosophy and required new managerial attitudes and perception of the management job, and, hence, became the base for a new set of managerial ideologies. The process of decentralization required the implementation of a number of new sub-processes, and these in turn began a chain of additional social and psychological processes, some of which were intentionally derived but many of which were unintentionally evolved. In short, the total social-system was in change, not merely organization structure.

The first of these sub-processes was that of the organization-structuring process itself. "Organizing" was specifically defined by the company as "the process of arriving at an accepted orderly arrangement of interdependent parts of a whole." Further, the process of organizing was

defined as applicable either to specific functional components, or product department components, or to the entire company as a whole. It included:

1. Determining objectives, and the policies, programs, plans, and schedules that will best achieve them.
2. Determining the total work to be done.
3. Classifying and arranging that total work into manageable parts.
4. Defining the responsibilities of work of each part and the relationships or teamwork between parts, whether components or individual jobs.
5. Determining requirements and qualifications of personnel to occupy resulting positions.
6. Selecting individuals to fill all the resulting positions.
7. Establishing methods and procedures which will help to achieve the objectives of the organization.

In this organizational process, each part in the structural arrangement was clearly classified and defined as to the specific work, together with the relationships of other structural parts. This was incorporated in a "charter" for each organizational component, and a "position guide," and "job description" for each individual. The essential principles were spelled out in detailed reports and memorandums prepared by one of the executive "Services."

At the outset, the major changes affected by the organization-structuring process of decentralization affected primarily the positions (and the individuals selected to fill those positions) of product department general managers and their "management team" consisting of the functional managers of engineering, manufacturing, and marketing. This was the management team drawn from the former vertical, functional hierarchies to form a new "product business." Perhaps oversimplifying somewhat, the actual work being performed by work groups under each of the functional managers of engineering, manufacturing, and marketing was very similar to that which was being performed by those work groups prior to decentralization. But it was largely at the level of general manager and at that of his immediate functional subordinate managers that the sub-process of social relations between groups and individuals was specifically implemented at the outset. New and clearly defined prescriptions and proscriptions centering about these managerial roles were developed and publicized. The relationships between groups, such as the functional groups intra-department, department to division, and department to the "services" were also prescribed.

Within the overall organization-structuring process, the sub-process of decentralization of decision-making authority with its concomitant objective and rationally-based set of measurements on performance played a significant

part in the emerging social changes throughout the company. Later chapters will discuss this in considerable detail, but it is important to note here that this sub-process became an important catalyst of social change. Another, and highly important process for change which was built into the overall organizational-structuring process of decentralization was designed to affect and change managerial ideologies. Chapter IX described how the perceptions and attitudes of managerial roles evolved through traditionally-based symbol systems. The social structural variables discussed in that chapter produced meanings of the managerial job over time, sentiment-based identifications with overall company and with functional components of the company, and symbolic meanings which served as socialization media which in turn affected predisposition toward behavior, or the general sets of personality-organization generally shared by management individuals. The conceptual aspects of decentralization required that many of the managerial ideologies which had thus formed over time be changed, adjusted, or eliminated. A sub-process of ideology-change, therefore, began, in some respects intentional and directly implemented, in other respects unintentional and evolving. It was clear at the outset that there was great need for new business management skills, but in addition a need for a new concept of the general manager's job, and new attitudes pertaining to it. Roles were described by the

processes of establishing charters, job descriptions, etc. but new expectations and sanctions had to be developed.

Accordingly, in the early days of decentralization considerable planned effort was exerted to create a new image of the professional managers position in the company. One of the major mechanisms for this was the program at the Island Camps in 1951 and 1952 where the need for new views and new philosophies of management was highly stressed. These were company-wide meetings attended by 3,000 to 4,000 managers from all components in the company. All former distinctions between engineering, manufacturing and sales were completely eliminated, and every effort was made to mix personnel not only by function but also by product responsibility. Even the assignment to living quarters was so arranged that "tent mates" were not only from different product areas of the company, but also from different functions. Most of the old Island traditions were eliminated for these meetings; the recreational program was virtually eliminated; the band no longer played at reveille, etc. The programs themselves were focused on the meaning of decentralization, the new philosophy of organization and management, the meaning of the operating general managers positions, etc. These were working meetings, with group sessions in the morning followed by seminars in which participants were required to discuss and "develop" precepts of management under the theory of decentralization. The

basic managerial "principles" of planning, organizing, integrating, and measuring were heavily stressed. Similarly, the techniques and processes of measurement were highly emphasized.

Another mechanism for the contrived development of new ideologies and new perceptions of the general managers positions was the broad use made of study groups known as "task forces." As the organizational process continued, and as product departments were "spun off" from the former vertical hierarchies, study groups were formed composed of a variety of individuals from several walks of company operations with the objective of analyzing and recommending the process of formation of the new department. Usually included on such study groups were individuals actually or tentatively selected for management posts in the new department. Such analysis had to be done, of course, but one of the planned results of appointing such study groups was the internalizing of the new concepts by the individual members of the groups. As a Vice President of the company observed recently:

The last few meetings at the Island, before the Island was abandoned obviously had as their objective the "selling" of the decentralization idea. Then after that you will recall the many task forces set up in the company. I really think that the task force idea was less to come up with specific recommendations and problem solutions than it was to get diffident groups together and "sell" dissenting people on the ideas of top executive management. It was another tool to develop in all management minds throughout the

company an agreement with an appreciation of the new theories of decentralization sponsored and activated by our top executives.

The above has been a broad description of the background for change, designed by executives for adjustment to technological change. But these structural and philosophical or ideological changes were only a part of the total process change in the social system of this corporation. They set in motion a chain of events and additional processes which in turn changed the path of dynamic, changing equilibrium of this social system, sometimes functionally and sometimes disfunctionally. To better understand this and to seek some explanations for the emerging social changes within this social system, we shall in the balance of this chapter describe how the seven variables discussed in Chapter IX changed over time, and what the meanings of these changes were to management individuals in the company, as reported by them. We emphasize that these were emergent changes; some of them came about as a result of intentional implementation whereas some of them did not. Most of them evolved over time rather than instantaneously. Further some of these emergent changes evolved not because of the avowed concepts and objectives of the decentralization process but because of disequilibrium in the social system itself. We also stress here that in the balance of this chapter we are discussing changes that evolved generally throughout the company in the seven



variables being described but that whereas they were adapted into the sub-social systems of some parts of the company quite readily, they were not readily adapted into the sub-social systems of other parts of the company with ensuing conflict which became the force for even further change. This conflict and its results will be described in Chapters XI, XII, and XIII.

Entry

Whether the company had decentralized or not, the recruiting process probably would have changed. The company had continued to grow throughout the war years requiring increasing numbers of technical or professional personnel. Further, the technological processes within the company itself--decentralization or not--were becoming increasingly complex. The many new technologies which had been developed as a direct result of World War II demanded men with new skills. Recruiting itself, therefore, became somewhat decentralized. This was particularly true in the technical recruiting; the technical recruiting staff was enlarged from a very few people headed by the manager of recruiting to a large group of coordinating recruiters who organized recruiting teams to visit the technical universities. A typical recruiting team would include as many as five or six recruiters, specializing in such disciplines as nuclear physics, engineering, mathematics, etc. The important

change here was that the college graduate was being interviewed not to come into the company's overall engineering program from which he later progressed to some specific functional area but to enter the company directly into the functional area itself.

Early Training

The test program.--With one exception which will be described below, the test program was gradually eliminated. Young men were recruited and hired for direct placement into manufacturing or engineering assignments of specific, named product departments.

The Sales Training Program discussed in Chapter IX has retained a number of "test" assignments. That is, when the college graduate was hired he was hired to enter a sales engineering career, but rather than being directly assigned to the marketing section of one of the Product Departments or to the field sales force, he entered a training program of approximately one year duration during which he was assigned a number of three month factory assignments, on a rotational basis, testing large apparatus. However, immediately upon entering, he had already cast the die for entry into sales engineering work, and was in social contact only with sales trainees. He did have some degree of choice in that he might sometime during this period elect an initial career either with a Product Department marketing section or with field sales.

Business training course.--The business training course, however, remained largely unchanged. Graduates of business and finance were recruited and assigned in much the same way as prior to decentralization. Many former members of this business training course now hold high executive positions in the company, and there is evidence that even though they have progressed to executive positions, they still retain a "family" and professional identification with the financial components of the company. A Vice President of the company (himself a "graduate" of the former test program) remarked:

I think we have definitely lost something by eliminating the test program. But consider the BTC program. BTC people still hold together even though they are spread throughout the company because of decentralization. I would predict that Mr. ----- (presently one of the top executives of the company) still keeps his finger in the BTC program since he came up through those channels himself. I would wager that he still attends meetings of BTC people, keeps his eye on BTC graduates, etc. These accounting and financial people in the company, having gone through a common program which is still in existence, seem to feel that they are all on the "same team," People used to feel that way to the extent that they were part of a big team, but I believe that the elimination of "test" have lost this for us and I believe that it is too bad it happened.

Many other managers of the company have expressed similar personal disappointment about the elimination of the former test program.

A regional sales executive stated:

Test was a good way to get started in the company. I met a lot of people who were on test at the same

time as I who are now spread throughout the company in important positions. You know how important it is to keep your pipelines open to people in the company and test certainly served an important purpose in this respect. The important thing about test was that it provided the trainee with a means to understand what the company was, and most importantly to give the trainee an opportunity to meet a great many people with whom he would have relations in the future.

Summary

The results of changes in the initial entry and early training processes is:

1. Trainees largely no longer come into a common "pool" but are assigned directly to operating components of the company in specific functional assignments.
2. The common, shared experiences at work and in classes no longer exist.
3. The social camaraderie which developed as the result of these shared experiences is essentially eliminated.
4. Whereas individuals quickly identify with specific operating components of the company, the identification with the total company is considerably reduced.
5. Where the common, shared early training experiences do still exist, as in the business training course, a "family" camaraderie and a professional and almost "fraternal" identification still exists.

Job Descriptions

In contrast with the traditionally based understanding of jobs prior to decentralization, jobs after decentralization became highly objectively and definitively spelled out. A written job description specifically outlining the duties of the job and the accompanying authority and accountability was prepared for every position in the company, managerial and professional non-managerial. Hence, the expectations, and the prescriptions and proscriptions of roles in the company became a matter of written record against which performance of the position could be objectively measured.

Significantly, job descriptions after decentralization not only spelled out the duties, responsibilities, and accountability of the position itself, but also specified the relation of the position to other positions. It is also important to note, following the concept of organizing discussed earlier, that job descriptions were prepared with no regard to present or potential incumbents. That is, it was the position itself which was described, without regard to individual personalities; under the concept of the organizing principles, candidates were then selected who had the behavioral traits, knowledge, and apparent skills for the spelled-out position. This is not to infer that under decentralization concept, abilities of individuals were subjugated, nor that less value was placed

on individual performance; it does mean that under decentralization, the rational and objective description of positions became a highly important base point for the operations of the company.

Another significant aspect of the complete spelling out of the job descriptions--and for that matter, the spelling out of the "charters" of groups--was the uniformity which prevailed. Before decentralization individual perceptions of management positions and the web of ideologies which grew up around different management positions and the web of ideologies which grew up around different management positions was extremely diverse. After decentralization, the position of a product department general manager, or a product department marketing manager, or a division manager was the same throughout the company. To be sure, the individual job description of the general manager of the product department "A" may have differed from that of the general manager of the product department "B," but only in such terms as expected sales volume, dollar level of profitability, etc. The detailing of the positions, however, was identical.

Individual Performance Rating

Under the concepts of decentralization previously discussed, the delegation of authority for decision making carried with it accountability in terms of specific and objective measurements of performance. In the early days

of decentralization, when its basic concepts were being described and "sold" to management personnel and professional workers throughout the company, great emphasis was placed on performance and the measurement of that performance. It was made absolutely explicit that performance was the ultimate test. Further, the concept of the manager's job clearly included as a most important part of his work the development and the concrete expressing of the factors, units, and systems which were to be used in measuring the performance of individuals and of entire work groups.

Written into the job descriptions of each position were standards of performance expected to be achieved by the incumbent in the position. Here again, the attempt was to make rational and objective the standards of performance which prior to decentralization had evolved traditionally. The rationale behind this was well expressed by a personnel officer of the company who stated:

Before decentralization there really was no pervasive and rational method of compensation and rating. Much was left to the discretion of the individual manager. You see, in those days the idea was that we paid men. Now, of course, the idea is that we do not pay men but rather evaluate jobs and attempt to set limits on the value of that specific job to the company. The man is then paid somewhere in the range of the established value of the job. Thus you see formerly the appraisal of a man was based almost entirely on the subjective factors and, of course, the subjective factors varied from manager to manager. Now all the emphasis is on the job itself; we have ample statistics on jobs now--past records of potential business from customers, actual received business from customers, the amount of

influence the job has on business being played elsewhere, etc.--therefore, we have a much more measurable approach to the job itself now than we ever had before. This has been accomplished by better analysis, better techniques of measurement, better accounting and reporting, etc. And to an extent, at least, it imposes a practical and rational approach to the worth of a job to the company. Formerly, there was a tendency for apparatus sales management to rate all of their people rather uniformly "excellent." The rating systems really didn't mean very much. And as I said, there was a great variation in the individual bench marks used by individual managers.¹

As with job descriptions, there was a significant uniformity of the techniques of personal evaluation of performance. To be sure, the content and the value to the company of individual jobs varied materially. That is, a design engineer in the computer department may well have had a different content of expected performance than did a design engineer in the air-conditioning department. Yet, the structure of the job descriptions and the commensurate standards of performance were quite uniform. In a nutshell, and oversimplifying, for managerial and professional positions throughout the company, the process of decentralization quite definitively states: Here is a job; this is a description of the job itself and the work to be performed, together with the degree of authority and responsibility the job carries here is the accountability attached to the job; that is, here are the objectives of the job, the end results required from the job, and the standards of performance

¹This interview was partially quoted in Chapter IX.

which will be required for the successful achievement of this job you, the incumbent, will be appraised on these bases.

It must be pointed out that as far as managerial positions were concerned, the great emphasis of quantitative measurement was placed on the performance of the manager's entire work group--that is, the degree of success of achievement of objectives. This was clearly stated as one of the principles of decentralization. However, it must also be pointed out that in every manager's written job description his own personal evaluation or appraisal would likewise be based on this standard--the degree of success of objective-achievement by his work component.

There is ample evidence that as new organization components were formed, that is, as new positions were created as new product department organizations came into being with new management positions, individual managers selected for these new positions readily accepted the rationale of definitive job descriptions, the specific objectives for these new positions, and the means of evaluation of performance. This was not the case, however, with those parts or sub-systems of the company whose organization remained relatively unchanged by decentralization whose management positions continued structurally much as they had been in the past, and, therefore, whose management personnel perceived no change in the methods or objectives of their work.

Here there was resistance not only to formalized job descriptions but also to the imposition of specific quantitative basis of measurement. This resistance was expressed by management individuals in a number of ways. For example, one regional sales executive stated:

They began to make their appraisals of the selling organization cold-bloodedly and over-emphasized measurement performance. I have always insisted that one cannot adequately measure the performance of a creative selling organization in a technical business. There is absolutely no way to adequately quantify our performance in our activities today and the value of these activities for future business. But, unfortunately, the product department general management, who were placed "under risk" because of the concept of "professional management" turned out to be less managers than "bean-counters." What do I mean by "bean-counters?" Well, here is a division manager back east some place, and he looks at the reports, the IBM reports from the accounting people, and looks at variations from budget and so forth. He then bases opinions as well as his decisions on these figures. All he is doing is counting beans. He is not being really a creative manager. Yes, the technique of measurement has improved materially and in many respects provide factual information to operating managers which materially assist them in their decisions. However, I think much of our management, particularly in the product departments, became "measurement happy" with the end result of placing too much emphasis on figures and dollars and getting away from the importance of the human individual in the organization. Paradoxically, there is a tendency for the better and more accurate information which we have now to cause some short range thinking on the part of some general managers. That is, they tend to shoot for good documented results in the present and are much less willing to take gambles on the future as they used to.

Another slant on the problems caused by the strong emphasis on quantitative measurement was voiced by an expert company consultant in operations research as follows:

The operating general managers have been admonished through the executive training programs that the job of the professional manager is to "plan, organize, integrate, and measure." All this, of course, must be done in the framework of clear, stated objective setting. Perhaps I should say that the main problem is how to balance objectives. Obviously, at any one time there are a number of objectives which a management must have--some of these are clearly measurable--such as profits, sales volume and so on. But, many of the other objectives although definitely spelled out as being objectives by top management, are not capable of measurement. For example, in all the company literature on effective professional management you will find that listed among the objectives of all professional managers should be such things as fulfillment of responsibility to the community, the obligation to labor, the development of management personnel, and so on. These things cannot be quantitatively measured--or at least we haven't found a sufficient way of measuring them--and, therefore, there has been a tendency simply to give a sort of lip service to these objectives. . . I think that perhaps it boils down to the fact that the general manager is in a position where he must produce on the measurable objectives and, therefore devotes his attention to these areas. And because of the organization structure itself and because of the high or relatively high ability to measure these certain objectives, the "human value systems" possibly have suffered. Before decentralization and before this great stress of measurement of results there were, of course, the same basic objectives of the business. However, because the accountability of the general manager was not so clearly fixed to the specific dollars in the business I suspect that such objectives as those involved in the relationship of individuals carried equal weight in the minds of management. They probably would today, too, if they were measurable quantitatively.

Salary Administration

As discussed in Chapter IX, the salary administration prior to decentralization was not really tied to anything other than executive decisions on the quantitative amount of total salary increases and the ground rules which were

determined variously for each of the salary reviews. Of course, there was often somewhat of a tie to performance by virtue of specifications relative to the "secret" managerial numerical rating of individuals. But this was a rating system which was separate from that established for discussion with individual professional workers; further, it was rarely discussed with workers. Hence, the integration of salary increases and job performance existed only subjectively in the minds of managers, and this varied greatly throughout the country.

A company-wide uniform salary administration plan was put into effect in the middle 1950's. This plan completely integrated job description and requirements, personal performance on that job, and the compensation for the job. Here the emphasis was placed on the job itself. With the job clearly delineated and defined, and the objectives of the job clearly specified, the value of the job to the company could be determined. Positions throughout the company from the chief executive down to the individual workers were rank ordered in a series of 26 levels. Numbers were assigned to these levels. For the first time in company history a candidate could approach a new job knowing precisely what the job entailed, what was to be measured and specifically what the level (or the value to the company) of that job was. He knew, therefore, that as an incumbent in that job he would be paid the minimum salary prescribed by that level

but as long as he remained in that job he could not be paid over the maximum set for that level. Each salary level carried with it a minimum and maximum dollar compensation; these figures were the same for every position carrying that level throughout the company.

As these positions levels (and hence salary levels) were established they were pegged relatively high. That is, job for job, the company determined to pay the incumbents of these jobs at least equal to or preferably higher than similar jobs outside the company. Salary levels in the company increased significantly during this process in the middle 1950's. Thus, many product department general managers earned more compensation than presidents of some sizable companies; many individual professional workers such as sales engineers, design engineers, marketing specialists, etc. occupied positions evaluated by the company as high as \$20,000 and actually received such compensation.

The other side of the coin was that the security of the individual incumbent was greatly reduced. Whereas before decentralization it was relatively rare for an individual to be removed from a position anything short of absolute incompetence or moral ineptness, after decentralization the rewards were great, but so also was the risk. Individuals were expected to perform at least to the minimum standards objectively set for the job and were so compensated, but failing to meet these minimum standards were

subject to removal from the job (and many individuals were summarily removed), being retired early, demoted, etc.

Summary

In considering the variables of a job description, personnel evaluation, and salary administration prior to decentralization, we hypothesized that the traditionally-based processes by which these variables evolved and were actuated resulted in the development of symbolic meanings wrapped around all of them causing individuals to identify strongly with men, rather than with the superior managerial positions, per se. After decentralization with the advent of organization--structuring based on rational factors (that is, based on jobs and relationships of jobs rather than on people), former symbols clustered about manager-worker relations became meaningless and new symbol systems evolved centered about positions rather than men, around rational quantitatively measurable objectives rather than personal relations.

Mobility

Great technological advances and the rapid growth in all markets after World War II would have resulted, even without decentralization, in some company growth--limited, of course, by the productive ability of the former centralized organization. But with decentralization and the

organization change into a large number of quasi-autonomous operating departments, the number of management positions increased very rapidly throughout the early 1950's. In 1953, it was stated that there were 16,000 managers, foremen, and supervisors in the company and more than 22,000 "high level" professional specialists such as engineers, scientists, accountants, sales engineers, lawyers, etc. At that same time, it was estimated (somewhat over optimistically as it turned out) that within ten years these requirements would increase to 25,000 managers, foremen, and supervisors and to more than 35,000 professional specialists.

The rate of mobility increased tremendously. In addition to the absolute increase of managerial and supervisory positions caused as a direct result of decentralization and the large build up of the "services," another vital factor influenced the rate of mobility. During the great depression years of 1930 to approximately 1935, very few men entered the company. Even at that time the company was large enough that, had the organization never changed, the normal attrition due to retirement, death, and the relatively low number of men leaving the company would have required the entry of at least three or four hundred new young trainees per year. Sizable numbers were recruited and hired in 1936 and 1937; however, 1938 was a year of recession and essentially no men were hired in that year. From 1941 to 1945, the years of World War II, the demands

for technical personnel increased greatly, far beyond the company's ability to secure new men. After World War II, from 1946 to approximately 1950, the supply of graduating engineers was relatively limited, and competition from other industries had increased materially. In none of these years did the company achieve anywhere near the numbers of technical men it required. Hence, for a period of about twenty years, from 1930 to about 1950, there were only three or four "good hiring" years. As a result, large age gaps existed at the very time, in the early 1950's, when decentralization itself placed an even greater demand for men to fill newly created management positions. All this caused rapid upward mobility for younger men in the company.

Perhaps an even more striking change in the mobility pattern was that of the path of mobility. Prior to decentralization the almost universal pattern of mobility for all individuals was upward within the individuals own professional, functional component. Engineers were promoted within engineering ranks, sales engineers within the sales organization, etc. After decentralization, however, due not only to increasing demands for managerial personnel but also due to the alleged relative universality of "professional" managerial positions with their uniform principles of management, the mobility pattern rapidly became horizontal as well as vertical. Thus, it became relatively common for

a design engineer in one product department to receive a promotion to a managerial engineering post in another product department, to receive an additional promotion to a higher managerial engineering position in still another product department, and ultimately to receive promotion to the general managership in still another product department. Managers whose previous experience had been entirely in the lamp department found themselves promoted to positions managing in the appliance business, the power generation business, etc.

Significantly during the early years of the decentralization process, 1951-1955, the Apparatus Sales Division was a prime source of managerial and supervisory personnel for the marketing sections of the product departments. There was a marked flow out of Apparatus Sales. This was particularly due to the fact that Apparatus Sales regional sales operations contained many men who were highly trained in specific product lines--the "product specialists" who provided "backup" sales and application assistance on specific product lines to the sales engineers. During these years many such product specialists were invited to transfer to product department marketing sections, assuming such jobs as managers of product planning, sales managers, and in some cases marketing managers. But the reverse flow was essentially nonexistent; that is, as technical personnel and some managers were transferred out of Apparatus Sales, their

positions were filled from within Apparatus Sales. Thus, although there was a considerable amount of "cross breeding" in other elements of the company, Apparatus Sales management continued to be appointed from Apparatus Sales ranks. This will be an important point of discussion in Chapter XI, XII, and XIII. We merely point out here, and will discuss the real meaning of it later, that high rate of horizontal and vertical mobility during the formative years of decentralization reinforced the development of new managerial perceptions and attitudes, and the development of new symbolic meanings throughout most of the company--but not in Apparatus Sales where organization remained such the same in a structural sense and the role expectations remained much the same in a symbolic sense.

The rapidly increasing rate of horizontal as well as vertical mobility posed many problems. With decentralization and the structuring of the organization into many relatively autonomous units, the increasing need for horizontal mobility became more difficult to solve. In order for division and product department general managers to know of and have access to competent and technical managerial personnel throughout the company, manpower "clearing houses" were established in each of the functional staff Services--manufacturing, engineering and marketing. These clearing houses were in effect "employment agencies." Every technical and managerial individual in the company was invited

to subscribe to these clearing houses, called "registers," by submitting a number of forms giving personal information about himself. Thus, each of these services built up a complete dossier on each individual who elected to participate in the register system--as the great majority of individuals did. Each individual submitted not only all his personal data and work experience but also indicated the types of positions he felt that he felt he was competent to fill and in which he had interest. Concurrently a company wide policy had been established requiring general management, when seeking candidates for a managerial position above a certain prescribed level to consider at least three individuals outside the manager's own component. The "register" served this purpose very well, and a large volume of requests were made to the registers giving specifications for candidates. The "register" then submitted to the general manager seeking to fill a position a list of candidates throughout the company who fulfilled the specifications for the position.

The wide spread horizontal mobility was absolutely essential during the first two or three years of decentralization; the staffing of the many newly created positions in the newly formed product departments simply could not have been achieved otherwise. And, such wide horizontal mobility fit the philosophy of executive management at the time--a philosophy wrapped around the concepts that

management was a kind of "professional work" unto itself involving certain basic principles which, once mastered, enabled a manager to perform efficiently in any kind of product business and technical milieu. The range of this horizontal mobility began to decrease about the mid-1950's, however, for two reasons. First, it became obvious that it took more than a mastering of the so called "managerial principles," to do an effective managerial job in many of the more technical aspects of the company's business. Second, by the middle 1950's, the rate of formation of new product operations had decreased and with it, the demand for new managerial personnel somewhat decreased. Consequently, managerial promotions became made more and more from within the respective division, and more and more from within the respective product departments. The rigid policy requiring the consideration of "outsiders" was relaxed. As stated by a management consultant staff expert in the company in 1961:

Not it is generally accepted in the company that management requires more than the "generic principles" of management; the manager must have insights into how to adapt to specific situations. Management mobility seems to be much more within a specific group of the company and in fact mostly within divisions. For example, you will find that managerial appointments being made in the major appliance division no longer bring in men from completely different and incompatible operations but are being made within that division itself. This means that the "registers" are falling apart and their proponents are complaining bitterly. Much emphasis is being placed today on the technical know-how of the business and the demands that this technology places on the general manager of

the business. This, of course, reinforces the behavioral reaction within the vertical chain (more than in the horizontal chain). As individual managers now perceive that mobility is being at least somewhat more restricted to certain types of business, and that probably the very wide mobility lies more closely within their own particular organizational components. This means that the individual manager is taking cues and signals from individual personalities in the hierarchy above him they may explain some of the conflict observed between interdependent components of the company. In the early 1950's and extending as late as 1958, there was a great fluidity of organization structure. New departments were being split off and formed; executive general management was being drawn very widely from personnel throughout the company. Now, however, we are approaching a phase of "organizational stability." The almost overnight springing up of product businesses has largely stopped; mobility is being more or less restricted to intradivision operations.

Later Training

With changing executive and managerial philosophy, changing organization structure, changing objectives, and changing role expectations and with the introduction of a high degree of definition and measurement, the need for training became acute. This was particularly true for the positions of operating general managers of product departments since these positions called for executive management blending all aspects of business--technical, production, marketing, financial, etc. Other than a handful of executives at the very top echelon of the former centralized functional organization, there were essentially no men in the company possessed with training and experience other than in a single function. This, at the outset of

decentralization, was the most critical problem perceived by executives.

At the outset of decentralization, of course, general managers of product departments had to be appointed from the functional ranks of engineering, manufacturing, or sales, without having had the broad executive type experience really necessary for these positions. As the result, there was a relatively high rate of turnover in the first year or two at the general manager level. Because of these, many managers in the company attached to the job of product department general manager a higher element of "risk" than probably really existed. A Group executive at executive headquarters of the company commented in this regard as follows:

Individual operational managers all down the line, based on the degree of responsibility and authority delegated to them, are "at risk." However, I think this was an unfortunate term, particularly during the decentralization period. After all, during the early 1950's when we were forming so many new and independent product departments, there were many general managers appointed who simply couldn't last. They simply didn't have the ability to perform as general managers in the new scheme of things under decentralization. Therefore, whether there had been any "at risk" or not, a certain number of these managers would have had to be replaced. It was, therefore, assumed by people that this business of being "at risk" was more potent than it really was. I admit that this may have affected the perceptions of management people, but I think unfortunately too many people in the company felt there was something unique or magic about this risk business. Many of the general managers who were appointed to manage product departments ranks. I suppose there was a tendency to select

engineers for the more technical businesses. In general, however--and this may be an unfair generalization--I believe that the engineers were less successful in becoming general managers than were the marketing and financial people.

Recognizing the deficiency of broadly, executive-trained personnel in the company, the company initiated a program in 1949 in anticipation of the growing need for such broadly trained executive people. This program, dubbed the "crown Prince" program by many in the company, involved the selection of functional managers generally in the age group 35 to 40 who had demonstrated outstanding potential for general management. These men were completely relieved of present assignments, and were given "special" assignments for a period ranging from six months to one year as an assistant to a top level manager in another function. For example, an outstanding sales manager in Apparatus Sales, approximately age 35, may have been appointed assistant to the comptroller for a period of six months. Conceivably, he then may have been moved to an engineering function and assigned the position of assistant to a top level engineering manager. In this way it was hoped that within a year, or two years at the most, such outstanding men would receive a broad practical background based on experience in many functions and hence be better qualified to assume in the future the exaction executive roles of general managers of product businesses. This program was short lived for a number of reasons. First, it

was extremely expensive because of the temporary waste of highly competent management manpower. Second, the experience of the first few individuals selected for the program rather quickly demonstrated that the program was less than adequately efficient for the achievement of its objectives. With the outbreak of the Korean War in 1950, and the quick shift of the company to its war-time operational plans, such "waste" of managerial manpower was deemed impractical, and the program was dropped.

The meetings at the Island in 1950, 1951, and 1952--previously discussed--served in a sense as managerial training media. These were not formal training programs per se, of course, but they did serve a descriptive, analytical, and explanatory purpose. In any case, management personnel throughout the company--some 3,000 of them who attended these meetings--began to perceive what was expected of managers in the new decentralized organization.

Advanced management course.--In 1955 the company invested over two million dollars in its now well known Advanced Management Institute. An estate overlooking the Hudson River about 35 miles north of New York was purchased and to the existing estate buildings a number of other facilities were added, including excellent living quarters, a class room building, etc. Set in a beautiful location and removed from urban atmosphere, the management institute had the environment and "feel" of a college campus.

The Advanced Management Course (hereinafter referred to as AMC) was quite frankly a "crish program" to train top level business managers. The program itself began in 1956 with approximately 75 top level managers attending an intensive thirteen week program. During their attendance these managers were temporarily relieved from all operating responsibility (acting managers serviced in their capacities) and lived at the Institute. The course later was reduced to nine weeks. Participants attended lectures, discussion sessions, and individual and group project work five and one-half days per week, often including evening sessions. Also included in the curriculum were some sixty lectures, about half of which were presented by prominent men outside the company from the fields, politics, business, etc. Each participant was expected to do about 1,300 pages of reading; each was required to develop a "strategy project" for the future of the company, including his own plan of action for it.

The program was aimed primarily at approximately 1,700 managers from the level of chief executive down through the functional managers reporting to product department general managers. By March of 1961, AMC had 142 graduates, including 80% of all present product department general managers, all but one division manager, and all five group executives. Directors of the program state that the objective was not to groom individuals for

promotion--that it was no "Crown Prince" program--but it was simply to improve the quality of managerial performance in present positions.

The first five or six sessions of AMC, running through 1955 and part of 1956 centered primarily about the new managerial roles resulting from decentralization. Many general managers of product departments previously had had no experience in managerial or executive problems such as policy setting, salary administration, overall business decision-making, etc. Thus, the program initially served as a most important medium for inculcating in individual managers' minds the basic principles underlying decentralization, and the concept of the manager's job in the new decentralized organizational structure. During this same period, however, another course known as "professional business management" was prepared, amounting actually to a condensed version of the more lengthy AMC. This program is discussed in more detail below, and was disseminated widely throughout the entire company. Therefore, the sessions of AMC after about the middle of 1956 were attended by general managers or their functional managers who already had attended the "professional business management" condensed program, and AMC then shifted from the "principles" of decentralization to more general management theory, and the problems of adjusting the enterprise to changing social, political, and economic environments.

In 1960 the AMC was temporarily discontinued. The announced reason was the necessity to reduce expenses in a year in which the company was exerting great effort to improve its profit position. An implicit reason was a need to reshape the program to new executive problems. The company is presently developing plans for a "postgraduate" course for higher level executives.

Reactions to AMC--to its objectives and its methods--varied widely, from enthusiastic acceptance to outright disdain. Possibly the most recurrent criticism was that AMC preached the doctrine of decentralization and the "principles" of management as dogma. One eminent university scholar employed as a consultant by the company, who had much to do with the development of the course at AMC stated it this way in 1960:

When the company embarked upon decentralization in 1951 and lasting through 1955, there was a dogma on the generics of management. When AMC was set up the AMC "faculty" wanted academic independence without interference from the operational management of the company. But it was generally the consensus of the attendees and also the perception of others in the company that the program wanted and sold a stereotyping of the managerial job in the company. Of course, there was lip service paid to this dogma by some management people. And this idea of stereotype can be checked with the practices in management mobility during this period. Some general managers were transferred around the company almost willy nilly--as though the idea were that if one could manage a hot dog stand he could manage IBM. But staff executives later said that they did not really mean that once an executive mastered certain professional principles of management that he was then capable of managing any kind of operation. They

backed away from this; now it is generally accepted in the company that management requires more than the generic principles--the manager must have insights how to adapt to specific situations.

A vice president and a division manager stated:

I think a lot of management took AMC with a grain of salt. I think that the company went on quite a kick for a while--or at least some of the Services people did--on the idea that once an individual mastered certain basic principles of management he could rather automatically be a good general manager in any kind of a product business. But I never did hold that any one mastering the principles of "planning, organizing, integrating and measuring" could successfully manage any kind of a business. You can probably recall several cases (here the informant mentioned the names of four or five general managers of product departments) where the general manager undoubtedly knew very well these academics of management but still completely failed in the operation of his business. I think that in a company like ours that it is absolutely necessary that the general manager of a product business be technically competent in that business. And I think that the idea which AMC seemed to foster that a successful manager of the toaster business could do a good job of running the locomotive business is not only fundamentally unsound, but is actually quite passe in the company.

Speaking of executive management training and development in the company, a high level executive of the company, now retired, but who had attended AMC in about 1955 stated:

You can't tell me that you can rationally structure an organization under the principles of professional or scientific management without considering the personalities of the executives as they come in and out of that organization. Another thing about people which I think our top executives have not adequately considered is this: people are fallible. I think this was one of the mistakes we made. Organization structure, organization aims and purposes, and organization operations were neatly structured on paper; so called "principles of management" were developed; jobs were spelled out; scope of operations of the departments, groups and individuals were spelled out.

And yet people are fallible--the concepts don't always work--mistakes are made--people view things in different ways. So the great marketing concepts and great concepts of organization that were developed in the decentralization periods simply were not Utopian. Fallible people held key position making jobs.

An operations research specialist and consultant in the company commented:

Much has been said in the company about professional management. I think that the principles sponsored by AMA centering around planning, organizing, integrating and measuring tended to falsely stereotype the professional manager's job. This is a company in which the manager must have a real knowledge of the business and I think we went through a bad period when the idea was proposed that simply a knowledge of these so called managerial principles enabled a manager to manage any business. I simply do not agree with the idea that, given a knowledge of these principles, any manager in the company could successfully manage some other operation of the company. Further, the advanced management course tended to develop too much conformity of thought--or probably more particularly, a conformity of behavior. Even though some managers say outwardly that they do not subscribe to all that the program proposed I think that the program did definitely create a conformity of behavior. After all, people simply will not buck the "system." And, the "system" requires a programming of activity. I must admit that I am a crusader against conformity and I am for the individual. And I think that the next major changes in the company will come in this area.

When asked about the Management Development Institute providing a substitute for the Island meetings, a vice president of the company replied:

I do not think it is a substitute. There is no spirit at the Institute. Of course, management from all over the company, from many different areas of the company's operations come there together for ten or twelve weeks, but it is much different from the Island. At the Island there

was very frankly a feeling of esprit-de-corps whereas at the Institute, managers were presented with managerial theories and techniques with which they did not all agree, and were required to go through actual working sessions. The Island on the other hand gave management people an emotional feeling. No, I do not think that it is a substitute for the Island.

Regardless of criticism, however, it is important to note that many managers in the company do in fact approach the work of their positions using the so called "managerial principles" emphasized during the early days of decentralization at AMC. Further, through AMC, a common language was quickly learned throughout the company; division, department, and functional section managers throughout the company speak in the vocabulary used at AMC and its condensed versions.²

The professional business management course.--AMC was attended by executives and managers down to a certain level--approximately the \$20,000 a year level. A condensed version of it was prepared in a set of several volumes covering such subjects as the concept of decentralization, the managerial "principles" of planning, organization, integrating and measuring, the "work" of the professional manager, the "work" of the individual contributor in the decentralized organization, etc. A large group of conference leaders for this course were trained at the Management Development

²We must emphasize that there has been nothing in this research which indicates clearly that AMC in itself functioned as some sort of mold out of which came uniformity of managerial behavioral patterns. There is some (Footnote continued on next page.)

Institute and returned to their home components to present the program to a large number of individuals down to and including many selected non-managerial professional employees. These programs were held throughout the company in weekly sessions of approximately three hours each, lasting for about ten weeks. By 1960 some 30,000 individuals had participated in this condensed version of AMC, widely disseminating, therefore, the concepts and principles of decentralization, the present view or philosophy of executive management, and the concept and specific description of the professional manager's role in the company.

Other training programs.--AMC and its condensed version of professional business management were programs slanted toward the broad, executive aspects of general management. In addition to these programs were developed by the various staffs or service components. Such programs as advanced marketing seminars, manufacturing management seminars, etc.

uniform behavior pattern, without question, through our observation. However, it will be our contention that this is a result of conscious regarding of role expectations emanating from a highly structured social system with clearly defined prescriptions and proscriptions, and identifiable and highly differentiated status system, and a very definitive expectation-sanction system. The AMC program undoubtedly contributed to this but it will be our proposition that it was not the direct cause of this. Further, we will propose in Part IV that although the Management Development Institute did develop symbolic meanings, it did not operate as a strong symbolic force as did other institutions or traditions in the company.

were prepared and were attended by selected managers holding positions in these functions in the various product departments, and in the Apparatus Sales organization. Such programs varied from two weeks to four weeks in duration and were normally held at the company's Advanced Management Institute on the Hudson River. They were technical in content, and highly specialized to the specific function involved. Almost without exception, participants found them highly valuable in assisting them in the better technical performance of their specific functions.

Still other training programs of all sorts evolved during the mid-1950's. These ranged from rather broad training courses on such subjects as the workings of the economy to highly specialized programs such as "The Psychological Aspects of Selling." "Later training" ranging from the polar extremes of executive management to that of highly technical programs dealing with computer application and automation proliferated during the middle 1950's. Even today some of the programs being developed are taking an interesting and perhaps significant slant. For example, a program is being currently developed and tried out in a few locations (about which we have at present very little information) aimed at increasing the business effectiveness of work components by preparing managers to better

understand the dynamics of social interaction and the psychodynamics of individuals.³

The island camps.--The "training" aspects of the Island meetings throughout the late 1920's and somewhat less frequently during the 1930's and 1940's, but again in the early 1950's, have already been discussed. Based on information received from numerous company executives and managers, the Island meetings did serve as a medium for identification with the company and as a source of inspirational and sentiment-based motivation. After decentralization was well underway by about 1950, the Island was no longer used; it was dismantled and finally sold in about 1956. Widespread rumors circulated that the company was seeking another location with more adequate facilities, but this has never been done. To be sure, there are periodic meetings of the top level managers in the company--usually down to and including the general managers of product departments at such places as White Sulphur Springs.

The Elfun Society.--We have also proposed earlier that the Elfun Society provided in a sense a mechanism for training. After its formation in the late 1920's and

³Based on our limited present knowledge of this program, we surmise that it is a composite of theories and propositions of such scholars as George Homans, Herbert Simon, and David Moore.

extending through the years of World War II, the chief executives of the company openly and actively solicited the study of company problems by the formal Elfun "Chapters." Groups of Elfun members throughout the country tackled pernicious problems and attempted solutions, recommending such solutions to the formal management of the company. This was not only welcomed--it was definitely encouraged. But at the outset of decentralization the then chief executive (Cordiner) rejected such activities of the Elfun Society. A sales executive of the company who had previously served as president of a large local chapter of Elfun and who had also served on the national administrative committee of Elfun commented as follows about the changing aspects of the Elfun Society, what it did, and what it meant:

Elfun provided a solution to a growing problem in the company. As the company expanded in its many operations both at factory locations and in the field, the Elfun Society provided a common bond between various elements of the company, again like the Island projecting the company spirit and pride throughout the organization.

This same informant was then asked the question, "What happened to Elfun and why did it change from a highly regarded sought-after group with considerable prestige within the company, to one which was simply an 'informal club' with really no direct bearing on company activities at all?" He replied:

(After decentralization) I think it was simply decided that it was the top executives who were going to determine policy in the company and not some group of uncontrolled management. However, I believe that the top executive management is beginning to feel that there is need for something like Elfun, and I think that the prestige and importance of this organization will probably return.

A vice president of the company, speaking of Elfun, stated:

I think the idea of the Elfun Society was a great thing. Here again, like the Island, it welded management people together. As the company grew the Elfun Society provided a group management sounding board and was a means for exchanging ideas among management people in different areas of the company. It stimulated new ideas. Personally, I think that Elfun made us all realize the greatness of the company and realize the company's growth and understand some of the company's problems. I don't think that the society changed very much in its importance until the early 1950's (at which time the process of decentralization began). After that the part that Elfun played in communication of management thought diminished materially. Yes, I think that it was absolutely by design that this happened. I think that there is no question but that the top executives wanted no part of debate or idea-creating during the period they were engineering the company through vast changes of organization and philosophy. But, I think the Elfun Society has reached its low point and is now coming back and is becoming something more important than it has been during the last few years. What do I mean by that? Well, I think the chief executive realizes that the pendulum swung too far in decentralization and the organization became not only physically split up but that there was a loss of feeling on the part of many management people for the whole company. And I believe that probably the anti-trust situation has accented this need for all management of the company to feel part of the total company. Therefore, I predict that the Elfun Society which after all is still in existence, may well become means for this. I think that our top executives have definitely begun to encourage once again this informal meeting of management people and exchange of management ideas.

Elfun had real, significant meaning prior to decentralization. This, plus the fact that the meaning of Elfun changed during the years of decentralization, plus the fact that the meaning of Elfun is once again changing can be explained not only in terms of its function but also in terms of its symbolic meaning; we will discuss this in more detail in our conclusions.

Summary

The underlying rationale of the decentralization process focused on the creation of a large number of quasi-autonomous product operations, each functioning as a relatively independent business unto itself. These operating units--the "product departments"--became the key building blocks of the organization structure. Superficially, it might appear that the structural dividing of this multi-billion dollar company into approximately one hundred quasi-autonomous operating units was a fragmentation of structure, both technically and socially. This is far from fact.

The Product Department operations have a number of important, common aspects.

The philosophy, the policy, and the actual procedure of the delegation of decision-making authority to the general manager of the Product Department is congruous throughout the organization.

The Product Department operation was "profit-centered." Each department was established as a business with a high degree of quantification of performance with regard to return on investment and net return to sales.

The departments had identical formal organization structure.

The Product Departments had a common set of performance standards--the key result areas referred to in Chapter VIII. To be sure, the dollar objectives of some Product Departments differed from those of others; but the areas for performance measurement, and the techniques of the measurement process itself were identical throughout the entire organization.

The Product Departments had similar broad charters; each had a similar "role" in the corporate family.

The written "position guides" for product department general managers were identical for all product departments. In fact, the position guide of the product department general manager was widely disseminated throughout the entire company; it was discussed and exhibited at the informational meetings held during the early days of decentralization; it was published in company journals and documents used in the management training programs. The intended meaning of the position of product department general managers was clear and definitive at the outset. Following the principles of organization (also discussed in Chapter VIII) this clear definition of the job of product department general manager

was established without regard to the individual persons. That is, the job itself, and its role expectations were highly specifically established. Further, there was a commonness in this role expectation throughout the diverse company.

The product departments' markets were diverse. Many had absolutely no overlap with any other product department of the company; for example, the X-Ray Department had little in common with the Refrigerator Department, market-wise. However, what was common was the dedication of every product department to its market and to the serving of that market.

The physical dispersal of manufacturing facilities which began after World War II together with the organizational decentralization resulted in the physical housing of many of the new product departments in new and relatively small plant cities. Of course, the large previous manufacturing centers Schenectady, Lynn, Philadelphia, and Erie continued to operate and to house several large product departments. But, there was a migration to such cities as Roanoke, Virginia; Rome, Georgia; Lynchburg, Virginia; Phoenix, Arizona; DeKalb, Illinois; Holland, Michigan; etc., each such city being the headquarters of a newly formed product department. Thus, many of the product departments, being operated as quasi-autonomous businesses, quickly developed a "community" responsibility.

In addition to these common strains, the very concept of the "professional manager" provided a common linkage throughout the company of position of the product department general manager. The "principles" of professional management--planning, organizing, integrating, measuring, etc.--were proposed and advocated at the early Island meetings and later in the Advanced Management Program, and did provide a communality to the managerial position, ideologically speaking. Whether or not the AMC preached dogma, it did accelerate a cluster of common perceptions about the general manager's job. The field counterpart of AMC, the Professional Business Management Program, further disseminated this concept of the "professional manager" throughout the entire company. A new language developed in the company--the language of professional management with its formal phraseology and with the jargon which developed around it.

Additionally, the establishment of the "job-level" system in the company, together with rather sharp increases in compensation particularly at the higher management levels, resulted in the placing of high value on the general manager's jobs. Not only did the job itself become clearly defined and well known throughout the company, but it also became well known that job of product department general manager was a highly remunerative one, financially, with total compensation from \$50,000 to \$60,000 per year. At the same time, it was clearly understood by managers at

all levels in the company that the positions of general managers of product departments were held accountable and were "at risk." Further, it was observed by many that general managers of the product departments were removed from these positions occasionally--an action relatively unheard of prior to the decentralization period.

All this resulted in a relatively short span of time in the development of a new concept and a new perception of the key operating management posts in the company, concepts and perceptions which were quite consistent throughout the company. The role of the general manager of the product department quickly developed an aura of prestige and authority. With the creation of approximately 100 such departments, a new managerial elite came into being.

The status-system of the social structure, the formal organization structure, the expectation-saction system, the communication system, and the decision-making system changed. But beyond that, these changes triggered social-system changes in every corner of the company, even those not directly affected by organization change. The following four chapters will explore this.

CHAPTER XI

APPARATUS SALES--THE CLINGING TO TRADITION

In chapter IX we described how the force of tradition shaped individuals' perceptions of managerial jobs, images of company and work functions, and identifications with company and work components. We have contended that the meanings of the company itself, the work-function, and the individual professional job were traditionally based, and were reinforced by strong symbolic meanings of rituals, practices, and procedures.

This was particularly evident in the Apparatus Sales organization--the separately organized selling arm of all the apparatus type business of the company.

The Apparatus Sales Division possessed at the time of decentralization a rich history of competency. This stemmed from the early days of the company, when even before the turn of the century the Selling Department of the early General Electric Company was perforce the applicators of the new electrical technology. In those early days, the Selling Department literally created a demand where there was none before. This creative demand creation never stopped. As discussed previously, as technology in the electrical industry rapidly proliferated the application

engineers and sales engineers of the Apparatus Sales Division analyzed industrial process problems, developed new applications of electrical apparatus, and creatively solved customers operating problems.

The division was highly competent, organization-wise; likewise, individuals in the division were highly capable. Essentially all individuals were college trained engineers; high standards of recruiting brought to the company outstanding men technically; the factory training, sales training, and additional training received after transfer to a region enhanced individual technical capability.

This was an organization whose structure had been relatively consistent for half a century and whose dedication to serving customers in the market place had always been the mainspring of the internal ideology. As a result, Apparatus Sales enjoyed high prestige both in and out of the company. Throughout industry, customers' respect for this organization was extremely high. Very few companies in any industry provided to industrial customers in the market place the "plus" service, the breadth of technological knowledge, and the ability to creatively solve customer operating problems. Likewise, this great selling organization was the object of both envy and emulation by competitors. To be sure, the competitive advantage which this provided to the company was narrowed in later years, particularly after World War II, when

many smaller companies specializing in certain specific fields likewise developed great competence. But, in industrial circles, the G. E. Apparatus Sales Organization commanded extremely high regard.

Internally, within the company, this organization was renowned. Individual Apparatus Sales managers and engineers were regarded with esteem generally, and enjoyed high status within the company. This was reflected in levels of compensation; levels of pay were relatively higher in Apparatus Sales than in most other areas of the company's work. Likewise, the non-monetary rewards in Apparatus Sales were relatively high with respect to the rest of the total company organization. That is, such kudos as invitation to Island meetings and to the Elfun Society, nominally restricted to management personnel, were granted to a relatively large number of outstanding individual Apparatus Sales application engineers and sales engineers.

To a large measure, the individual sales engineer was more than simply that. Vis-a-vis customer executive personnel, the sales engineer was regarded in customer circles as an "executive type" individual. To a large extent, unlike the sales representatives of many supplier companies, the Apparatus Sales engineer not only had access to the executive levels of customer organizations, but in a significant number of cases became intimately

acquainted with customer top management people on a social plane. This was not merely taken for granted by Apparatus Sales management and engineering personnel; however, it was accepted as a fact of business life. And, this was recognized within the company as well as in the market place.

Coupled with an accepted high level of competence and the ensuing prestige, Apparatus Sales management and professional personnel had long enjoyed an independence of operation. From the very start of the company, this organization had been independently structured. Of course, to many in the company outside the Apparatus Sales Organization, industrial selling with its high content of technological and systems knowledge and its high dollar volume developed a sort of "mystique." Even after World War II and during the days of decentralization, the arcane qualities of the complex industrial selling operation seemed to defy objective analysis through such techniques as operations research, the application of measurements, etc.

This independence, as an organization within the company, exhibited itself in a number of ways. Prior to decentralization, when the product sales groups in the general office were part of the Apparatus Sales Organization, it was normally the product sales manager who "ran the show" as far as unifying engineering and manufacturing efforts and integrating them with sales efforts. As

expressed by one Apparatus Sales executive in describing what he called the "supremacy of sales" prior to decentralization:

Well, we had a vertical organization during the period 1935-1945. That is, sales ran its business, engineering its, and manufacturing its business. But, really when you stop and think about it, sales ran everything. I can recall when I had an assignment in (a certain plant city), in the (a certain product) business, Bob ----- who was manager of sales there, really ran that whole factory. What he said was final with the engineers and with the production people down there. I think that up until the time of decentralization, this was pretty generally true throughout the entire Apparatus end of the business, and I also think very strongly that the engineering people and the manufacturing people resented this bitterly.

Similarly, a vice president of a company, when asked about the relations prior to decentralization of headquarter's sales groups with various engineering and manufacturing groups, pre-decentralization, commented as follows:

In most cases the sales headquarter's departments--that is the Motor Department, the Transformer Department, etc.--really ran the business. (Plant city "X") provides a good example; Buster -----, Manager of Sales, really ran the whole (product "X") business. Of course, the managers of engineering and manufacturing at that plant city did not report to him--they reported to their respective engineering or manufacturing management in Schenectady. However, Buster really ran the business. He pretty much dictated to those other departments the overall objectives of the business.

This vice president was then asked the question regarding how the sales regions operated at that time--that is whether they were relatively independent in their

operations or whether there was management either in the product operations or commercial headquarters dictating to them. His answer was:

No, the regions were quite independent. Of course they might occasionally check in with the sales headquarters in Schenectady, but the regional manager normally did pretty much as he felt advisable.

The regional managers in Apparatus Sales, at least until the middle 1950's did "run their shows" quite independently. A regional manager, presently incumbent, in remarking about this stated:

The regional manager in those days (pre-decentralization) might or might not check some of his decisions with people in Schenectady, but even if he did he very likely would still go ahead and do what he wanted to do. Today it is different--the regional manager must be careful to check out with a number of other management groups or he is likely to find himself in disfavor.

This independence did not stop at the higher levels of management within Apparatus Sales. In each region, there were a number of large district, or "local office" sales operations, each of which was staffed with application engineers, sales engineers, service engineers, and complete warehouse, order service, etc. facilities. The managers of these "local offices" also enjoyed a high level of freedom and independence in the manner in which they operated their respective territories. The regional managers to whom they reported gave them great latitude in decision making and in fact quite overtly stated that the "local office manager"

was the key authority in his own area. One "local office" manager in talking with the author recently commented about a previous regional manager to whom he had reported in this manner:

Bill ----- was in my opinion one of the outstanding regional managers in all my experience. The thing which made him outstanding in my opinion was the fact that he let us run our offices and our territories as we saw fit. If we needed some help or had some kind of difficulty with the engineering or manufacturing people, he was always ready to help. But he never indicated in any way what we were to do; he never gave us any feeling that he was looking down our throats; he simply let us run our business.

This even extended to individual sales engineers. Apparatus Sales management regarded individual sales engineers as "executive-type" individuals. Over time the concept of this job had developed a managerial content--that is, it was overtly expressed by Apparatus Sales management that the sales engineer was a "manager" of his business and of his individual territory. As noted in a previous chapter in discussing the rating and evaluation of performance techniques, Apparatus Sales management found it difficult to quantitatively evaluate individuals' performance because of the quite complete freedom of operation granted to the individual.

Thus, throughout this organization, and for many years, a high value was placed on individuality, and a considerable amount of freedom of operation and freedom of decision making was developed by all individuals.

All this contributed to the making of a very proud organization. This was a major social as well as organizational system within the company with high esprit-de-corps, a very close "family" feeling, and intense loyalty to the company and to Apparatus Sales. The individual identified closely with Apparatus Sales and in so doing identified very closely with the total company. Most individuals in Apparatus Sales felt that Apparatus Sales essentially "was" the company. As expressed by one manager, "Well, if Apparatus Sales wasn't really the company, at least it was the heart and the brain of the company." Apparatus Sales people had a sureness--almost a reserved cockiness. As one man expressed it, "Well, I guess we were sort of like the New York Yankees."

But, there was a high degree of parochialism in this organization. Apparatus Sales people felt apart from the rest of the company. Generally, they felt that they were "a cut above" other sales or marketing components of the company such as the lamp sales organization, the appliance sales organization, etc. This extended even to some elements of its own organization. For example, in addition to the selling directly large industrial customers, the Apparatus Sales Division also franchised agents and distributors--normally other independent business men in the electrical supply business--to sell apparatus type products to small industrial companies not contacted by the direct

selling organization. These agents were generally looked at by the Apparatus Sales engineers with considerable disdain; further, the G. E. Apparatus Sales personnel assigned to develop business through such agents in a rather subtle way were not accorded as much status as were those sales engineers directly assigned to calling on industrial accounts. A presently incumbent regional manager of Agency and Distributor Sales commented on this situation as follows:

I think that until recently Apparatus Sales people were enamoured of their own prestige. They wanted to build a fence around their operations, keep everybody out, and not even allow any questioning or observation of their operations at all. They felt that they were a great selling organization--which of course they were--but let this blind them to any change whatsoever. Even when they did reluctantly admit that there was some place in the organization for the agency and distributor operation, we who were in it were definitely second class citizens in the organization. What do I mean by that? Well, the Apparatus Sales people felt that the level of competency of those of us in the agency business was below their own. If a sales trainee was thought to be a little lacking in technical ability, even though he might have outweighed this in other abilities, the attitude of Apparatus Sales management people was "he's not good enough for us, put him in the agency operation." Whenever there was shuffle in organization and one of the more marginal Apparatus Sales people was eased out of his position, he was put into the agency operation. We got the dregs. Further, if any of the younger men saw opportunities in our growing business, and expressed an interest in the agency operation, Apparatus Sales management did everything possible to persuade them not to move into our group. The Apparatus Sales management people had a definitely superior attitude. I'll give you an example. Mr. ----- (a district sales manager) said to me one time, "how can you ever expect to get anywhere in the company? You didn't go through the

district training, you were never assigned to industrial customers, and you were never a sales engineer. You never learned what it was like to call on industrial customers. Yet, here you are in a management job without that experience. How do you expect to progress?" Now, of course, these attitudes are changing rapidly. Our operation is regarded in a very favorable light and at last, I think some of the old building of walls has stopped. What do I mean about building a wall? Well, the old Apparatus Sales people were stodgy. They were doing the same things in the same way that they had done for years and were so persuaded of their own superiority that they would not even think of change. When change was forced upon the organization, they fought it. In some ways they are still fighting-- But I believe that our operation is now plainly accepted by Apparatus Sales management."

No only did Apparatus Sales itself have a high degree of parochialism but even within this social system, there were "little parochialisms." The various Apparatus Sales regions were themselves like little "families." Each region developed a character and a pride. Because of the relative independence of the various regional managers, the syntality of each region was unique. To be sure, the Apparatus selling job was very much the same from region to region but intense loyalty developed within each. Apparatus Sales people talked of their respective regions as a Yale graduate might talk of New Haven, or a Harvard graduate of Cambridge.

Now, all of this was reinforced by the non-rational aura of the selection and training of the members for this social system. As previously discussed, the source of man power for the Apparatus Sales organization was the

"pool" of young trainees in the "test program." Of course, all of these men had initially been recruited at college level according to a very high and very selective set of standards. Hence, even before being selected for Apparatus Sales, trainees had been hired according to a certain company pattern in view of the type of individual desired in the company. When selecting its trainees from this pool, although not overtly and formally expressing it, Apparatus Sales training management had developed over time a definite image of the "typical" Apparatus Sales person, and therefore had developed a stereotype of the Apparatus Sales candidate. Trainees were selected on a competitive basis. After the selection, the rituals and other symbolic media began. Once on the sales training program, the candidate then went through a general office training period of two to three years but even then, was required to "compete" for his ultimate job in regional sales. Here again, a recruiting process began; regional managers or someone on the regional staff periodically visited the various sales training location at the major plant cities and interviewed perspective candidates for ultimate regional jobs; sales trainees in turn selected a choice of two or three regions attempting to "sell" themselves to those regions. When a trainee was selected for a certain region and accepted an offer to come to that region, he was "tagged" for that region until the conclusion of his training program. Finally, when he

finished his training--the latter part of which was normally specified by the region--he physically transferred. But, even after arriving at the region, he normally spent at least one and often as much as two years in a sort of "apprenticeship" before being assigned to industrial customers as a sales engineer. During this time, he was normally assigned as an "inside salesman" and handling telephone inquiries from customers, handling dictation and quotation work for sales engineers, etc. He did not receive a formal training per se, but nonetheless this entire process, which followed the same pattern year after year, served as a socializing medium enabling the young trainee in his first three to four years in Apparatus Sales to gain a meaningful conception of the organization, its jobs, and its people. A typical reaction to this process was expressed by a district sales manager as follows:

You asked about my recollections of the first couple of years in the ----- office in the ----- region. In those days, the young man transferring to the regional office was assigned to work as an assistant to one of the older sales engineers. This is how he learned. I was assigned to Mr. ----- . In this assignment I handled his routine mail, sometimes writing letters to customers for his signature, made quotations up for him to deliver to customers, handled routine telephone calls from customers and so forth. His only customer, of course, was the XYZ Power Company, and in that way I came to learn the organization of the customer and some of the problems the sales engineer had with that customer. It was good training. I also had to learn in this way the product problems,

which one of our factories to contact for various types of information, etc. No, there was no formal training during that first couple of years. It was simply a matter of working in the office with the older sales engineers and learning in that way. I regarded this as a wonderful experience. The people in this office, particularly the sales and application engineers, were a wonderful bunch of men, highly competent, and attractive to me. There was a wonderful family feeling there. For example, during the summer time we periodically had golf outings to which all of the men in the office would go--we don't seem to have time to do that sort of thing now and I think that's regrettable. I was very proud of the company then and very proud to be associated with the ----- office.

Another factor, and a significant one, promulgating the generation-to-generations traditions of Apparatus Sales was the mobility pattern within the organization system. Promotion came almost entirely from within. This was not only true in total--that is, high level management jobs at Apparatus Sales general office headquarters were filled by Apparatus Sales people--but even within regions, promotion was largely from within the region. That is, for almost half a century, when a regional manager's job was to be filled (due to retirement, death, or promotion in almost all cases) the new executive was chosen from within the ranks of that region. For the most part this also occurred at the district management level within regions. Hence, there was definite--and deliberate--inbreeding.

All this resulted in very little social-system change in Apparatus Sales relative to the function itself, and relative to the perceptions by individuals of the meaning

of Apparatus Sales as a social system and as a hierarchy of statuses and jobs. An individual who had retired in the late 1920's would have felt very much at home in Apparatus Sales had he returned a generation later, in the early 1950's; he would observe different technologies and an expanded technological knowledge, to be sure--but the structure, the management ideology, the methods, the life itself was very much the same in Apparatus Sales even a generation later.

Nor was Apparatus Sales management unaware of all this. In fact, Apparatus Sales management in general worked at keeping a sameness. Decentralization in the 1950's brought drastic changes in the Product Department operations of the company. However, for reasons to be explored in the next chapter, the function of Apparatus Sales was an island in a sea of organization change. Apparatus Sales people saw change. But, they knowingly built a wall around themselves. To be sure there were some changes in the middle 1950's; several of the larger regions were divided and the Apparatus Sales division headquarters realigned itself as discussed in Chapter IX. But such changes, although many Apparatus Sales management people felt that they improved the efficiency and productivity of the organization, did not significantly change the attitudes, perceptions, and ideologies of Apparatus Sales people. Such organization change did not really change the social structure.

But, as we shall describe in depth in the next chapter, the top executive management of Apparatus Sales did see the "handwriting on the wall," and foresaw some forced changes. This was not as discernable at the regional management level and at the level of the rank and file. Here individuals, in general, although realizing that decentralization had far reaching effects in the organization structure of the company, did not foresee the impact of change on Apparatus Sales.

In summary: Apparatus Sales for half a century had existed as a strong social system always with its roots in the traditional past. It was a highly competent and proud organization with high prestige within and without the company. It was parochial, self-contained, organizationally independent. It was a viable organization continually improving its efficiency and productivity through the development of its technical and technological sub-systems--but it experienced very little change in its social syb-systems.

But, vis-a-vis the new ebullient product department system which had no traditional past and which experienced a high degree of emerging, rational structure and new organization, new managerial ideology, new techniques of business operations, Apparatus Sales found its external environment (within the company) rapidly and radically changing. Here were two independent but interdependent and interacting social systems--one, traditionally oriented with

a rich history, proud of the past and in a sense living in the past but sensing the future moving in on it--and another, born of dynamic change and accorded a high level of status and authority by the chief executive. The stage was set for ideological conflict.

CHAPTER XII

THE PRODUCT DEPARTMENT-APPARATUS

SALES DIVISION DILEMMA

We have just asserted that the decentralizing of the company into relatively autonomous product businesses but leaving Apparatus Sales Division as an independent agency set the stage for conflict. Why was this done? At a casual glance, it would appear that leaving Apparatus Sales quasi-autonomous violated the concept of decentralization--in that the field selling function of a business certainly belonged under the jurisdiction of that business if decentralization of authority were truly accomplished. The answer lay in the markets themselves, and here the architects of decentralization faced a dilemma with regard to the apparatus type business.

In the apparatus type business some thirty to thirty-five product departments had been organized, each with relatively narrow lines of apparatus products. In the aggregate, these departments accounted for about half the company's total sales. Under the concept of decentralization, each of these departments should have been given complete operating authority including the sales function--and this was so done with the many other product departments

of the company--the Lamp Departments, the Appliance Departments, etc.

But in the apparatus business the markets coincided or broadly overlapped. Large industrial customers for electrical machinery, such as steel companies, automotive companies, electric power companies, etc. purchased electrical apparatus to a large extent in one of two ways when making capital expansions. First, in many cases, electrical machinery products were purchased in engineered systems. That is, all the electrical equipment including incoming power, distribution of power, and the various power utilization devices were integrated and engineered into a complex operating system. Second, even when there was something less than an engineered system (such as the automated steel-mill), industrial customers often purchased capital equipment in "combination." That is, they often asked for one bid on a lengthy list of electrical equipment items.

Thus, from a marketing viewpoint, it was highly advantageous to have some means of "putting together" a wide variety of electrical apparatus products. For the technological systems, this was absolutely mandatory; for the "combination" propositions it was highly desirable, both from the customers and the electrical suppliers' viewpoint. G. E.'s strength in the past, vis-a-vis smaller, single line competitors in this regard had been outstanding.

Parenthetically all through the 1950's the smaller, "single-line" competitors were reacting to this great strength of G. E. and Westinghouse by combining in the market place in many regards. That is, a motor manufacturer would "team up" with a control manufacturer to submit a joint engineering proposition to a customer. Also, there were signs of some merger moves between some of the smaller, single line companies. This, of course, was regarded as a means of combating the competitive advantages of the two larger, multi-product companies. At this point, to have a fragmented Apparatus Sales would have meant the loss of the company's great technological strength in designing and applying engineered systems to industrial processes. This would have been a loss to the company, but it would have been a serious loss to industry in general.

Now, of course, the system technology requirements were not so important in some of the markets served by the Apparatus-type product departments. For example, many of the capital purchases made by electric power companies--a sizable apparatus business--were made in "combination" form and not in engineered systems. That is, when designing and erecting a new power plant, an electric utility normally retained a consulting engineering firm to do the engineering for the power plant, and purchased the components such as the turbine-generator, the large generator transformer, the

station switch gear, etc. piece by piece.¹ Yet, all these component products in a power plant had to be so designed to "fit" and work together, from an engineering sense. Likewise, the electric power company did not purchase products for their power distribution systems as "engineered systems," except in special cases. But electric power companies had long indicated that they wanted to deal with one supplier sales engineer and one point of contact with a supplying company. For the customer to have been faced day after day with many different G. E. Sales engineers--one from the Turbine Department, one from Power Transformer, one from Distribution Transformer, one from Switch Gear, one from Meter, one from Large Motor, etc., etc., was unthinkable to the customer--or so it was believed by G. E. management.

Likewise some other important industries did not purchase apparatus type products on a systems basis. For example, in the machine tool industry, customers purchased motor and controlling devices--sometimes in a sort of a systems sense, but in many cases the purchase was made product by product. But here again, the peculiarities of the industrial market exerted a force in favor of a single apparatus selling organization. That is, one sales

¹ Parenthetically, in the late 1950's even this sector of the market showed trends to becoming engineered systems, particularly with the advent with atomic power.

engineer may have been assigned to a machine tool customer; this customer's own market was with such large manufacturing industries as the automotive companies, steel mills, etc. Other G. E. sales engineers were assigned to companies in those industries--and the liaison between the two G. E. sales engineers was highly advantageous both to the company and to the machine tool customer.²

Therefore, market determinants overrode the internal company desire to decentralize completely to product departments. Apparatus Sales Division was therefore retained as a "selling agent" organized at the division level. Complete responsibility for the market--for all aspects of customer contact and development--was given to Apparatus Sales. Thus, G. E. sales engineers assigned to major industrial customers were responsible for the sale of all apparatus type products to these assigned customers--coming from many different product departments. Complete responsibility and authority for all sales planning, sales development, sales strategies, and selling procedures was left in the hands of Apparatus Sales management. In short, the entire field sales function was assigned to Apparatus Sales. In turn, of course, Apparatus Sales, had the responsibility of

²Again parenthetically, by the late 1950's, advancing technology, to which G. E. contributed significantly, led machine-tool manufacturers to engineer complex machine tools as "systems."

adequately representing all apparatus product departments and developing market demand, and creating new sales for each of the departments.

But this posed difficult problems for both Product Department management and Apparatus Sales management.

Product Departments.--Under the concept of decentralization, the Product Department general manager had delegated to him great authority and accountability. Of course, certain authority was reserved by higher executive management; company-wide union negotiations, certain long term contracts involving such materials as steel and copper, certain policies regarding gifts to charitable institutions, etc. were reserved. Also, each Product Department was given in its charter a "product scope," or range of product types for which it had authority, and could not range out of this scope without approval. That is, the Locomotive Department could not decide to go into the automobile business without higher approval. But for the most part, the authority for decision making delegated to the Product Department general manager was vast. He had authority to a very high dollar level in making capital expenditures; complete authority for design of product was his, the entire manufacturing process was completely his responsibility; personnel selection, training, and development was his responsibility; short and long range forecasting and

budgeting was his responsibility; advertising, pricing, terms of sale, service, warranties, etc. were all his responsibilities. In short, essentially all the authority to run a complete business--and commensurate accountability--was assigned to the Product Department general manager (and of course, he in turn delegated to members of his management team, the managers of manufacturing, engineering, and marketing, over whom he had of course complete control). However, one vital function--field sales--did not come under his span of authority.

The Product Department general manager and his marketing manager had no authority over selling strategies and tactics--sales planning--customer contact--selling methods--selection and training of salesmen--assignment of salesmen to specific customers. The line of communication to and from customers in the market places existed only through Apparatus Sales, an organization outside the control of Product Department management.

Yet, the Product Department general manager (and in turn his functional managers on his management team) were accountable for the achievement of a specific assigned objective in nine important measureable areas (see page 81, Chapter VI--"The Nine Key Result Areas). His department's and his own personal performance was measured quantitatively against these criteria, and his department's and his own personal success was dependent on the degree of achievement

in each of the area. But such vital areas of measurement such as the profitability, optimum sales volume, and market position were obviously highly dependent on sales performance--and in the vital area of sales, the Product Department general manager lacked control. He held accountability for results in these area, but management control over them or over the vital selling function, lay in someone elses hands--the Apparatus Sales management.

To make matters even more difficult, his department was in competition with other departments for Apparatus Sales Managements' and sales engineers' time and efforts. Hence, he and his marketing manager were in the difficult position of trying to "sell" Apparatus Sales personnel to devote more selling effort to his own product versus another department's products. This posed particular difficulty for some of the smaller Apparatus type produce departments. For example, a former general manager of a relatively small product department, presently a vice president and division manager in the company, made the following statement in this regard:

As General Manager of the ----- Department, I felt that our department did not get a good enough shake from Apparatus Sales, particularly from headquarter's management and from the regional sales managers. I think that for years these sales management people have been wedded to the larger apparatus business (here he referred to product departments selling very large high dollar value apparatus) and did not pay adequate attention to my business. After decentralization the individual product businesses operating as separate businesses flushed out a lot of interesting

facts; for example, it wasn't until then that the company learned what an extremely profitable business my ----- department's business was--but Apparatus Sales management in my opinion did not adequately recognize this.

Another severe difficulty placed in the path of the Product Department general manager was the lack of real control over selling expense. Thus, his profitability was affected not only by sales, but also by the expense incurred to achieve these sales. The field selling expense incurred by Apparatus Sales Division was allocated by Apparatus Sales to various product departments on the basis of actually time spent on behalf of each department. This was a complicated accounting process which Apparatus Sales struggled in an attempt to do it equitably, but the point is that the Product Department general manager had no control over this expense or its allocation. A significant complexity in this process stemmed from the fact that in such a capital goods business as electrical apparatus, considerable time and effort, and hence selling expense, necessarily accumulated well in advance of actual orders. For example, in some cases, great selling effort and expense would be incurred for many months before they culminated in an order. Hence, the Product Department general manager held close control over his own manufacturing and engineering and product department marketing expenses--but not over field selling expenses for his products. To be sure, there were periods of negotiations between the Product Department

general management and Apparatus Sales general management, but any concessions granted under such negotiations to one product department meant that other product departments had to assume such increment of expense. Sooner or later, these product departments would object.

Summing briefly, after decentralization, the Product Department general manager was an executive with great power and authority and accountability. He was the chief executive of a business. Essentially all the elements of business decision making were his along with appropriate controls. Yet, he lacked control over one of the more vital functions of his business--the field selling operation.

Apparatus Sales Division Management.--Likewise, after decentralization Apparatus Sales management faced a number of difficulties. The charter of Apparatus Sales was clear--secure maximum sales at optimum expense; improve market position (per cent of available business) of each product line and in each market; develop new applications, new markets and new demands; maintain and improve customer relations; etc. And Apparatus Sales was held accountable for these objectives.

But accountable to whom? The Apparatus Sales Division manager was assigned to a group vice president, but Apparatus Sales served many product departments in the divisions of other groups. Certainly, Apparatus Sales had a moral if not statistical accountability to these departments as well.

Thus, there was accountability to groups of management outside Apparatus Sales own organizational hierarchy.

Then there was the difficulty of measurement. Product operations had developed a high degree of quantitative measurement in many areas. But, in the market place quantitative measurement was difficult. To be sure, management always had orders and expense statistics; however, the per cent of available business (or "market position") was extremely elusive and subjective of debate. And sales performance is dependent not only on "internal" variables; competitive actions, changes in customer processes, procedures, or people also affected performance. How could this be measured quantitatively?

Further, the decisions made by Apparatus Sales management in regard to "investments" in selling expense were subject to debate. The value judgments on present expense for future business obviously varied--and Apparatus Sales management was in the difficult position of making decisions on expenses involving product departments outside Apparatus Sales' own hierarchy.

But, the major difficulties lay in the day-by-day operating activities. Apparatus Sales historically had always been completely customer oriented. For years about 90% of sales quite consistently came from only 10% to 15% of customers--the large industrial customers. There had been a long build up of rapport, cordial relations, and

mutual respect between Apparatus Sales and its large industrial customers. This had always been a prime objective for Apparatus Sales. After decentralization, the individual product departments quite legitimately developed their own individual policies--quite often incompatible with one another. For example, price policies: At one time in the mid 1950's when inflationary forces were still causing price levels in general to drift upward, Apparatus Sales faced the the difficulty of presenting to its industrial customers a wide variety of differing price policies for the many different product lines which Apparatus Sales sold; some product departments had a policy of "price in effect at time of shipment" (that is, if a price increase occurred after the order was placed but prior to the time of shipment, the customer would pay the new higher price)--other product departments had a "firm price" policy is, when the order was shipped, the customer would pay the price in effect at time of the order--other product departments had varying degrees of "price protection" (that is, for goods shipped within 30 days of a price increase, the customer would be protected and pay the price in effect at the time of the order, but after 30 days would pay the new higher price); others had a policy of "price in effect with 60 day protection" still others with 90 day protection, etc. Let us say therefore that the customer purchased or was considering a purchase of \$150,000 of products coming from five product departments.

There could very likely be five differing price policies. This was not only confusing and aggravating to the customer, but some policies were not competitive in the market place. That is, one product department may have had a "price in effect at shipment" policy whereas competitors for that same product line were granting the customer price protection. Often, this particular product department refused to change its policy, and be competitive. Business was lost because of this and in many cases the loss of the business was "blamed" on Apparatus Sales.

Then there is the question of price itself. At any one time, one product department may have been somewhat "hungrier" than another, and therefore amenable to price negotiating, if Apparatus Sales learned that a large combination proposition was not competitive. On the other hand, other product departments may have been adamant, holding on to their presently quoted price. Here again, business was often lost on the large combination or systems projects because of this, and invariably the "hungrier" product department criticized Apparatus Sales for loss of the business. We should add that to alleviate these difficulties Apparatus Sales set up a headquarters staff group to work with product departments in this regard and did achieve some degree of success in ironing out the incompatibility both in price policy and in pricing. But all this tended to change customer's perception of the company--

or at least Apparatus Sales people felt that it did. One sales executive commented as follows:

After all when the customer thinks of G. E., he thinks of us, the sales department. He couldn't care less about our decentralization. With all these product departments, now each running its own course with differing policy and differing attitudes about business, the customers now feel that the company is more of a big monster than before decentralization. I thought that decentralization would help us "turn on a dime" and give us the advantages of these smaller companies in some regards--but actually from the customer's viewpoint we are more unwieldy than ever."

There was still another aspect with regard to price in the eyes of Apparatus Sales management and sales personnel. In past decades G. E. had always held a high margin of quality of product over most of its competitors, with the exception of Westinghouse. As a result, General Electric prices in the industrial business were generally higher than many of its smaller competitors. And, customers often willingly paid for the extra quality engineered into the G. E. products. By the mid-1950's, the company began losing business because this quality gap had been narrowed and because customer purchasing and engineering professions had become more highly capable. Prior to decentralization, the sales function had more power to rectify engineering and manufacturing policies to adjust to changing market conditions. Now, Apparatus Sales felt that it had lost that power and that product departments held it--and were critical of Apparatus Sales inability



to continue selling at a premium. (To the credit of the product departments, it must be stated that by the late 1950's they fully recognized this and had become highly competitive).

Summing up, Apparatus Sales management, at headquarters and in the field, also faced some dilemmas as a result of decentralization. This relatively autonomous selling division had a clear charter, specified objectives, and was measured (albeit less quantitatively than in other areas of the company) on its performance, and was held accountable for achievement of specified objectives. Yet, in a number of important regards, Apparatus Sales management felt that it did not have control over certain elements of selling vital to the success of the selling operation. Or if not control, certainly no adequate recourse.

Hence, as we concluded in the previous chapter the stage was set for conflict.

CHAPTER XIII

PROCESS OF CHANGING POWER RELATIONS

The Product Department social system evolved initially through a set of executive decisions. Its highly specific structuring was at the outset rational and objective. Created through a series or pattern of executive decision making in order to adjust or adapt the entire company to changing external environments, the process of "change" itself was structured into this new social system. Adaptability, adjustability, flexibility--these were specifically held up by top executives as desirable, even mandatory business attributes. Within this new social system, "change" became accepted as an ever present fact of business life. For one thing, change within the Product Department system became physically apparent. For another thing, the buildup of the new image of the decentralized structure of the company as disseminated by executives and by executive staff officers hammered away at the need for change, explicitly and implicitly, directly and subtly.

Yet the Apparatus Sales Division, throughout the decentralization period of 1950 to about 1958 remained essentially as it had been for decades. As we noted

previously, there were some minor organization changes--but structurally, conceptually, and ideologically, there was little change in this social system. Apparatus Sales management felt, of course, that they and their predecessors always had been adapted to the market place.

We shall discuss the ensuing and inevitable conflict between these two important social systems from two views. First, we shall describe a series of actions taken by Product Department management, supporting this description with statements made by both Product Department management personnel and by Apparatus Sales personnel. Second, we shall describe the counteractions: employed by Apparatus Sales management personnel, also supporting these actions with statements from Apparatus Sales personnel. We stress that these actions took place over a period of time--mostly from the period of about 1955 to 1958. Also we stress that these did not occur in chronological order and, although engaged in by all Product Department managements, were more actively pursued by some than by others. Another important point to keep in mind throughout this discussion is that although the Product Department general managers by the mid 1950's had become the essential core of the entire company's executive operating management and although there was a high degree of commonness in all the Product Department general managers positions and a high consistency of equated status--and although we are asserting

that a distinct social system had evolved from this--nonetheless, because of the diversity of operations, many Product Department general managers had little or no personal contact with others. Yet, in spite of this, common managerial behavior patterns with respect to attitudes of and actions toward Apparatus Sales evolved throughout all the apparatus type Product Departments. We preface our description of the actions taken by Product Department management and the counteractions by Apparatus Sales management with a statement from a high level executive of the Apparatus Sales Division who in 1962 (and then recently retired) commented in retrospect as follows:

The Product Departments were insisting on change. Yet, they would not hold long enough for an adequate test period. The real way to examine the efficiency of an operation is to develop a theory, set up a model, apply the theory and test it. But, the Product Department would not wait for the test. There were many things during those difficult days that I tried to do to eliminate criticisms of the Product Departments, but long before what we did could be proven right or wrong, the Product Departments were insisting on still further change. While Mr. ----- was Apparatus Sales Division general manager, he took too long to make changes and was defensive and tried to hold Apparatus Sales exactly as it was. I recognized that we had to make changes and attempted to do so. But, I learned that it wasn't change that the product departments wanted, it was power and authority over us.

The Product Department management and other executive management of the company were seeking change for the sake of change. Change itself became almost a fetish. It appeared to me that if an organization were in place and doing a good job, but had not made some kind of a change during the past couple of years, eyebrows were raised, and it was assumed that the organization

was less than completely competent. Change itself seemed to become an objective in the late 1950's.

Contrast this with comments also made in 1962 by a group executive vice-president of the company referring to the Apparatus Sales Division of the mid 1950's:

(Decentralization) gives us greater flexibility. It means that the organization is better able to re-shape its objectives and operations. . . . I would prefer some amount of changes in perception of people and even some disfunctional results, rather than to risk the possibility of stagnation or inability of an organization to adjust. Now this doesn't mean that I am in favor of violently shaking up an organization by imposing on it a new personality of a new executive, just for the sake of shaking it up. In fact, I am proud of the stability of my own group. . . . In fact the chief executive told me recently that he thinks probably there is some direct relation between the stability of organization, as far as personnel is concerned to profit of that organization. However, this is all a matter of balance. The "old" Apparatus Sales Division was an organization which had been so rooted in its own past that it never changed. This organization never replaced a manager except when incumbents became 65 years old and were required to retire. This simply doesn't make sense. There were management people in the "old" Apparatus Sales Division who simply could not understand or accept the changes in the present--could not realize that the whole nature of our business was changing--and could not adjust themselves to it. Yet, this organization tried to keep itself fixed organizationally, and tried to keep its managerial individuals in their jobs indefinitely. Here is a case where I agree that change for the sake of change was probably a good thing.

Some common patterns of behavior exhibited by Product Department management in their organizational interaction with Apparatus Sales during this period were:

1. Control of sales budgets
2. Control of expense budgets (money control)
3. Threats to "Secede"
4. Forced reorganization studies

5. Attacks on Apparatus Sales salary and level structures.
6. Personal favoritism
7. Use of product specialists
8. Coalition
9. Veto power (control of selection of apparatus personnel)

We shall discuss each of these below.

Sales budgets.--Officially, the Apparatus Sales orders forecast was developed by the Apparatus Sales Division. In October of each year each Apparatus Sales engineer submitted to his manager a forecast of orders he expected to achieve in the following year, by customer and by product line. These were consolidated in each of the sales districts and further consolidated in each of the sales regions, with management adjustments being made in each case. The forecasts were finally aggregated at Apparatus Sales headquarters, and again adjustments made based on market research studies, etc. On the other hand, each of the Product Departments also prepared its own forecast for the coming year. Product Department general managers were required to hold periodic "business reviews" with their division and group executives during which time they proposed the potential and capability of sales for the ensuing year. After receiving approval for their forecasts, however, the Product Department management had to reconcile their forecasts with those of Apparatus Sales. This involved a negotiating process with Apparatus Sales.

Now, the product departments were legitimately aggressive. Further, each Product Department management understandably placed a strong "plus" factor on its new structure and hence tended to be on the optimistic side in forecasting. On the other hand, Apparatus Sales forecasting was traditionally conservative.

In the negotiating process with Apparatus Sales, the Product Departments generally forced Apparatus Sales to accept a higher budget than had been submitted. When this budget was broken down and reallocated to sales regions, the regional management frequently found that they were having imposed on them sales objectives materially higher than they sincerely felt were possible of attainment. This had two effects. First, it was disturbing to Apparatus Sales regional management strictly from a business sense; lacking quantitative measurement on many aspects of the business, the per cent of budget achieved had become an important criterion, and the imposition of what was perceived to be an unfairly high budget was regarded with considerable concern. Second, Apparatus Sales regional management began to feel that its own executive headquarters was losing its negotiating power with the product operations. As one district sales manager commented:

Before decentralization we always had a court of appeals. That is, if we didn't get what we wanted we could appeal to headquarters to go to bat for us. But after decentralization, the Product Departments became absolutely independent. They began

dictating what was to be done and what was not to be done and there was often no appeal whatsoever. The Product Departments began to run things their own way and became extremely autocratic. This meant we could no longer do things as we saw fit, and we no longer had the court of appeals at our own headquarters--our people began to let us down and after some degree of time lag, we found ourselves here in the field under the dictates of the Product Departments.

In 1962, speaking in retrospect of this period, an Apparatus Sales headquarters staff manager stated:

In those days (1955-1958) you must admit that the Apparatus Sales Division very often did not really know very closely how much total business was being placed by large customers. This gave the Product Departments a wedge which they were able to exploit. Now, of course, our forecasting and accounting system is very functional. But it wasn't then. It is true that back in that period we had a great deal of difficulty in establishing sales budgets acceptable to both us and the Product Departments. There was unquestionably a feeling on the part of the Product Departments that Apparatus Sales was conservative and I do admit that the Product Departments were critical of Apparatus Sales performance. Of course, you will have to admit that there was a tendency on the part of Apparatus Sales to forecast on the low side, and conversely many of the Product Departments were growing and expanding and hence were quite demanding on the liberal side. Today this process is not quite so difficult.

But in this period of the middle 1950's, the Product Departments did exercise great leverage on Apparatus Sales with respect to sales budgets, and "forced" Apparatus Sales to accept budgets highly difficult of attainment, in the eyes of the Apparatus Sales managements sales personnel. In fact, throughout most of this period, it was common more often than not for most of the sales regions to be running under budget on most of the larger dollar volume product lines.

This had an extremely adverse side effect. Expense budgets were approved on the basis of orders budgets; if the orders budgets by mid-year was falling short of achievement, expense budgets were normally pared back resulting in difficult managerial decisions regarding the cut back of expenses. This, in some cases, drastically affected salary programs and in some cases forced a cutting back of what sales management felt were very necessary expenditures as investment for the future.

But any failure of Apparatus Sales to meet the sales budgets was frequently cited by Product Department management to their own executive management as demonstration of the inadequacy of the present Apparatus Sales organization. In a sense, therefore, they transferred the accountability for below-budget sales performance to Apparatus Sales--which on the surface was reasonable enough (see preceding chapter)--but was not reasonable in fact, since the unachieved budgets had been imposed by the Product Departments. Speaking to this point, an executive of the company who was during this period of 1955-1958 a marketing manager of a large product department stated:

The electric utility industry itself did a poor job of forecasting. They were always anticipating that the next four or five years would be much greater growth years than they actually turned out to be. I think that our own product department management made the same mistake--we all thought that the boom would continue and the demands for our products would be increasing at a much greater rate than it actually

did. So you see here were these relatively new product operations--very strong ones--very dynamic--increasing plant capacity and feeling that if they had control over their own field sales operations, they would have achieved better results than were being achieved by Apparatus Sales. Thus, I really think that during the middle 1950's, Apparatus Sales was being criticized somewhat unjustly. You see, these were all forces in the market and within the company which caused the product departments to place possible unrealistic demands on Apparatus Sales.

Expense budgets.--Just as Apparatus Sales headquarters negotiated sales budgets with Product Departments, it also negotiated expense budgets. As indicated previously, the total selling expenses of the entire Apparatus Sales organization were allocated to Product Departments essentially on a basis of time and effort spent on behalf of the various Product Departments. Periodically, each sales engineer prepared a budget of time which he had spent during the past time period on behalf of the various product lines on which he worked. These were consolidated and assessed against the appropriate Product Departments. By the mid 1950's, many Product Departments were objecting severely to these assessments on them. As noted in the previous chapter, these product departments were being held accountable for profit, and yet had no control over such selling expense--an untenable situation under the concept of decentralization. Yet because of the previously discussed necessity of a separate selling organization serving all the apparatus type product departments, this was a necessary evil. The

product departments reacted to this by forcing negotiations for these expenses. Hence without regard to the other negotiation regarding orders budgets, Apparatus Sales headquarters staff management spent considerable time and effort with Product Departments in arriving at an acceptable expense budget. The result of this is clear--the Product Departments demanded higher orders budgets and lower expense budgets. In effect, therefore, the Product Departments succeeded in getting a large measure of control over the money by which Apparatus Sales Division lived.

Threats to "secede."--Strictly speaking under the concept of decentralization, each Product Department general manager had the freedom to choose his channels of distribution and the organization of his marketing effort. Although the Apparatus Sales Division had been kept intact as a pooled selling organization, each Product Department general manager knew that in fact he could, if he wished, withdraw from this arrangement and establish his own field selling organization. Ample evidence exists that most of them would have preferred to do this, in order to secure complete control over their entire marketing and selling operations. Many openly threatened to do so. And, of course, this was well known throughout the Apparatus Sales management organization.

Speaking to this point, one produce department marketing manager stated.

Mr. ---- (division manager of his Product Department's division) appointed me to head up a study group to study the marketing and field sales of the products of this entire division. He made it very clear to me what the outcome of this study should be--namely that this division should break away from Apparatus Sales and establish its own field sales force. He stated to me that there would obviously be considerable resistance to this from the field sales force but he wanted the study to validate such a move.

A division vice-president of the company who during the period 1955-1958 was a general manager of a Product Department stated:

Yes, I agree--a number of Product Department general managers did openly threaten both to Apparatus Sales and to their own higher management to divest themselves of Apparatus Sales and set up their own separate selling organization. I did that myself. On a number of occasions during our managerial reviews and in some of my discussions with Apparatus Sales headquarters, I definitely stated that if Apparatus Sales did not do certain things for us, we would drop them as a selling function and set up our own sales organization. As a matter of fact, we actually laid out some specific plans and programs to see just how this could be done.

A marketing manager of an important Product Department commented:

At that time (1955-1958) I think that Product Department management were pretty determined to take over the Apparatus Sales Division themselves. That is, I believe they could no longer live with a very strong and powerful outside organization handling an important part of their business. Most of the Product Department management in our division felt that the Apparatus Sales management were not really part of their own team. We had a study to see how the field selling organization could be reorganized--to be more effective and get more business to be sure--but also to see how the Products Departments could have more control over the field selling of their own products.

These moves on the part of the Product Department management--some merely open threats, and other backed up with the actual formal studies--became first apparent to Apparatus Sales top executive management, the reactions of whom will be discussed later in this chapter. But in time of course they became perceived by all members of the Apparatus Sales organization causing first resentment and finally fear and anxiety, which we shall also discuss later in this chapter. Here we are simply pointing out what the Product Department management did, in order to attempt to secure a greater measure of control over the field selling operations.

Forced Reorganization Studies.--Several of the Product Departments, and in some cases entire divisions, actually prepared formal studies for withdrawing from Apparatus Sales and setting up their own sales organization, as noted above. But this also had another effect. These threats to "secede" forced Apparatus Sales itself to begin studies of its own organization. In the middle 1950's a number of such studies were made by Apparatus Sales, studying its own organization. One was done by an outside consulting firm who made a rather extensive study among customers of Apparatus Sales. The upshot of this study was "proof" from the market place itself that the present Apparatus Sales organization was highly desired by customers.

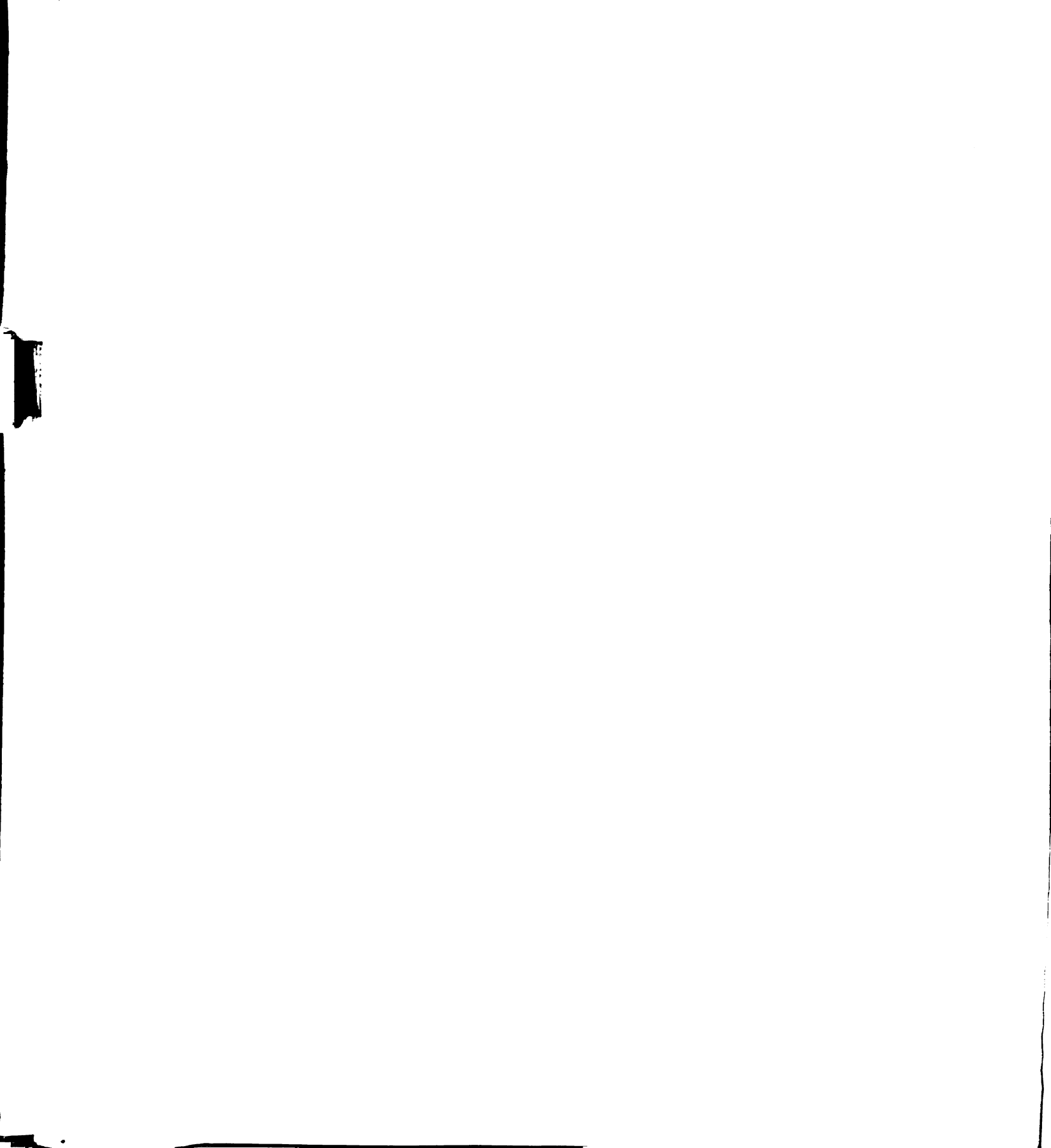
A number of Product Department management people unofficially indicated they felt that this report was "rigged."

But other internal studies of the organization itself did result in several organization changes, which have been described in previous chapters. Each of these changes was announced by Apparatus Sales executive management as being in tune with the times, and adjusting and changing Apparatus Sales organization structure to fit the changing internal and external company environments. However, none of these changes deterred the product departments in their continuing and increasing criticism of Apparatus Sales--as indicated in the first quotation in this chapter.

These self-studies, however, did represent the beginning of a series of defensive maneuvers on the part of Apparatus Sales itself, more of which will be discussed later in this chapter. We stress however that the forces behind these self-studies came from the Product Departments in direct counteraction to Product Department criticism of Apparatus Sales.

Attacks on apparatus sales salary and level structures.--

In addition to the frontal attacks on Apparatus Sales by Product Department management, there were several diversionary attacks. One of the more important of these involved criticism by the product departments of Apparatus Sales' salary and level structures.



As discussed in Chapter IX, the entire Company established a common pattern of job descriptions and job levels in the mid 1950's. Briefly reviewing what was stated in that chapter: Each job in the company was objectively analyzed for its value to the company. An appropriate "level number" was placed on that job. The hierarchy of levels ranged from a high of 26 (the chief executive officer) down to the lowest level of #1. Most product department general managers, for example, were in the level range of 18 to 22. Their marketing managers were in the general range of level 16 to 18. However, the level structure achieved by Apparatus Sales was relatively higher than this. Many regional managers, for example, were assigned a level and received a compensation as high as some of the Product Department general managers of the smaller Product Departments. Similarly, one managerial step below regional manager--the district sales managers--had levels equal to and in some cases greater than many of the marketing managers of Product Departments. This was a bone of contention. Perhaps even more serious was the fact that whereas all jobs--that is managerial and professional--in the Product Departments had specific level numbers attached to them beyond which the incumbent could never rise unless he were promoted to another job--the levels assigned to Apparatus Sales sales engineers and application engineers were flexible. That is, in the level

schema as applied by Apparatus Sales, a sales engineer could retain the same job and yet over time be progressively increased in level up to the level of 14 (which in 1960 commanded a compensation of approximately \$18,000 per year) and, statistics on average Apparatus Sales levels indicated that job for job the professional workers of Apparatus Sales Division were at a higher level, and had opportunity to increase these levels, than the Product Department professional personnel. This was a severe bone of contention. (This flexibility of the professional employees level in Apparatus Sales was later eliminated.)

A personnel officer of Apparatus Sales commented as follows with regard to this level problem:

It is true that in those days (1955-1958) the field sales organization had the idea that any specific sales engineer's job could be leveled anywhere from level 7 to level 14. In other words without any change in the job itself, that is, the customer assignments etc., any specific job with a specific incumbent could be progressively up-graded level by level until he reached level 14. This resulted in a great area of conflict between the Product Departments and Apparatus Sales. It is true that the Product Departments did have jobs specifically tagged and evaluated and a systemization of salary administration. On the other hand, it wasn't until recently that this same degree of systemization was applied to the field selling jobs. You must remember that for the first several years of the 1950's Product Departments were building rapidly in managerial manpower, and there was a considerable flow of people from Apparatus Sales to Product Departments. The Product Department could offer a sales engineer a job at a specific level which may have represented a very small degree of promotion--and yet found that the sales engineers had a greater chance of progress even in their same jobs within the Apparatus Sales Division.

This was simply another fly in the Product Department ointment. Incidentally, I think that the product specialists in the field contributed materially to this. You remember how the product specialists in the field would go back to their Product Departments for a meeting and have special "secret" sessions which really weren't very secret and pass around information about their respective salaries. And, you recall further that in any group of product specialists there was a wide variation of job levels and compensation within this group. That is, the older specialists might have a level of say 12 with a salary of \$15,000 while the younger product specialists in another region doing the same job might have a level of 8 with a compensation of \$9,000. Yet because of the fact that these two individuals were doing approximately the same jobs--as a matter of fact the younger one might have the more important job if he happened to be in a large region--caused some questioning among the Apparatus Sales specialists themselves. There was a great disparity within any similar group in Apparatus Sales. The Product Departments resented this greatly and the product specialists added fuel to the fire. You remember how Mr. ---- (a general manager of a Product Department) in his visits throughout all the regions made quite a project of finding out the salaries and levels of all the product specialists working on his products, and also the levels of salaries of key sales engineers. This was a period of great friction. And, of course, the Product Departments wanted the general structure of their levels at least as high or probably higher than what they thought were comparable jobs in the field selling organization.

Apparatus Sales Division management stoutly maintained that key "executive type" sales engineer jobs could not be specifically pegged. That is, they maintained that changing conditions in the market place such as increased competition, changing customer practices, etc. changed the character of the selling job from year to year. Further, they maintained that by virtue of increased creative application engineering ability, a sales engineer in a specific job did have a

potential to enlarge the content of that job. Nevertheless, the power of the Product Departments prevailed, and by about 1959 or 1960, the Apparatus Sales Division was required by executive management to restructure all its levels and completely change its managerial concept levels. Each job in each of the regions was specifically "pegged"--that is, assigned a value to the company and assigned a specific level. This meant that the sales engineer incumbent had a maximum compensation in that job beyond which he could not go unless he transferred to still another job. We hypothesize (although it is too early at this point to see the results) that this will force desire for mobility on Apparatus Sales engineers which heretofore had not been existent. We also hypothesize that this will create major problems for Apparatus Sales management in that each region will have "major league" and "minor league" jobs and the movement of individuals from job to job will be more complex. This also will have repercussions on customer relations, in that a higher degree of mobility (purely for the sake of compensation) will periodically disrupt customer relations.

Personal favoritism.--Perhaps a more subtle and insidious set of behaviors of Product Department management in securing a greater degree of control over Apparatus Sales came from Product Department management's calculated

favoritism (or conversely lack of favoritism) for certain Apparatus Sales management and sales personnel. It is our observation that such behavior was actively engaged in by some Product Departments to a greater extent than by others. And, it is our observation that it was engaged in by those Product Departments who were most vociferous in their overt and formal criticisms of Apparatus Sales. To understand this, one must realize that much of the industrial capital-type business involved very large dollar volume orders. Large steam turbines, for example, had a selling price of anywhere from six million dollars to twelve million dollars. Large power transformers had selling prices of from fifty thousand dollars to five hundred thousand dollars. During the time period we are examining in this chapter, prices were extremely competitive. On such large orders, prices were normally negotiated. That is, a price was quoted to the customer, usually "normal" price, but very often the Product Department with its complete control of pricing extended to the sales engineer a certain leeway for him to use to try to secure the business if it appeared that the price was slightly high. Further, there were other special concessions that Product Departments sometimes made to customers in order to secure business.

But, these price negotiations and concessions were not done "across the board." Such would have been

tantamount to a general over-all lowering of prices which simply would have lowered the whole price structure in the entire industry. Hence, certain jobs were selected which the Product Department, for one reason or another, wanted very much to have. But, this was often done on the basis of personal friendship or favoritism to selected Apparatus Sales management or professional personnel. In other words, it is our contention that the Product Department used pricing and special efforts to help make certain Apparatus Sales personnel "look good" and refused such assistance to other Apparatus Sales personnel whom Product Departments wanted to "look bad." This is a severe indictment. But there is evidence validating this contention. When asked about organization conflict between Product Departments and Apparatus Sales, and very specifically with reference to the seeking of power by Product Department management, a marketing manager of a large Product Department spoke as follows:

Yes, there was a lot of conflict. In fact, it was probably a lot worse than you might suspect. The Product Department management at that time, and I won't name any names, were certainly out to "get" Apparatus Sales. Further, there were certain individuals in Apparatus Sales who were on the black list and they were particularly shot at. Further, our own departmental sales managers were told that in no uncertain terms to approach Apparatus Sales and their relations with Apparatus Sales Division with a chip on their shoulders. They were specifically told to be arrogant. I know I heard a lot of complaints from some of my friends in Apparatus Sales about the arrogance of our management--but you really mustn't blame the sales managers of our

Product Department--this was an edict from top management. It was part of an over-all strategy to alienate Apparatus Sales, to pin it up against the wall, and finally to completely dissolve our division relationships with it.

After hearing this statement, we commented to this Product Department marketing manager that we recalled a period of time when sales managers of his department were advising us to "get out of Apparatus Sales and associate with the Product Departments." These Product Department management people stated that the "handwriting was on the wall and sooner or later there would be no Apparatus Sales Division and future opportunity would lay only in the Product Departments." The Product Department marketing manager replied to this statement as follows:

That was typical. But therefore you must have been one of the guys on the "good" list. Those that were on the "bad" list didn't even get the time of day from our management. In fact, as you probably know, there was a period along about the time that we were making our study of the sales organization that sales managers of our department were instructed to make personal contact with customers, to wherever possible. This was particularly done in those cases where we were "out to get" certain Apparatus Sales people.

Another Product Department marketing manager discussed these tactics as follows:

When I was in the region as a product specialist before being transferred to the Product Department, we product specialists were extremely interested in promoting our own products. I felt that I was in competition to try to help the field sales engineers do a better job of selling my product line, whereas the other product line, whereas the other product specialists obviously were trying their best to secure additional effort on their lines. It seemed quite natural to me that the Product Department management should be exhorting us to secure additional

business. But as I look back, particularly having had experience in the Product Department, I can see that there was more to it than that. What do I mean my that? Well, there was a great deal of criticism above and beyond exhortation. I first became aware of this when I realized the Product Department marketing managers were being openly critical of certain Apparatus Sales individuals by name, rather than merely by the selling functions of Apparatus Sales. For one example, I think you know how openly critical some of the Product Department managers were of Mr. ----. (A certain regional sales manager in Apparatus Sales) I feel quite sure that a number of Product Department managers were ganging up to "get him."

My theory is the Product Department management were very much under the gun during this period. They were being pushed by division managers and group executives to increase volume, profit, and market position. They were coming out with product innovations, with new marketing strategies, etc. Yet, the implementation of these innovations and strategies were in the hands of people outside their own organization--Apparatus Sales Division. Now, at the same time, other Product Departments in other product divisions were doing the same thing. Hence, these Product Departments were in competition with each other for the attention in time and effort of regional management, district management, and sales engineers. Hence, each Product Department tried to get various field sales people "on their teams." If the Product Department felt that an individual sales engineer or sales manager was on its team, and really devoting a major or significant part of his time and effort toward that Product Department, you never heard any criticism of him. As a matter of fact, the Product Department seemed to go out of its way to give him special assistance which in turn made him "look good." But, I figured that if this happened the district sales manager or sales engineer therefore may have appeared to other Product Department people as being not on their teams and hence they became critical of him. This was a pretty impossible situation for the field sales people. Of course a few regional managers like Mr. ---- were able to so maneuver themselves so that all the Product Departments felt they were "members of their teams."

If the Product Departments became critical of a certain field sales manager they also became critical of the sales engineer reporting to that sales manager. This happened not only at lower levels but also at higher levels. For example, I think that a whole region could come under the shadow because the Product Departments or some combination of them were, let's say, out of sorts with the regional manager. I think that happened in the ----- region. You know how unpopular Mr. ---- was with the Product Departments in our division. I feel quite sure that most of the district managers under this man in this region and many of the sales engineers in the region automatically also came under the same shadow.

This is more than normal managerial desire for improved operations. There were personalities involved. As I said the Product Department management felt that it was under the gun and since it had no direct authority over Apparatus Sales, the closest thing it could get to direct authority was the feeling that Apparatus Sales people were really on that specific product team, even at the expense of other product departments. It was like choosing up sides. I think it was a matter of getting a sort of unofficial authority. The Product Department people who did this did it deliberately and openly. I think it was actually political maneuvering.

Product Specialists.--For decades, Apparatus Sales had two important "backup" sets of personnel to assist sales regions, who were technically trained and highly skilled in the systems application of products to specific industries and processes. Another was the group of "product specialists" also located in each of the sales regions. These men were highly technically trained for specific product lines. They gave special product assistance to sales engineers when applications were complicated but complicated but involved only one product line.

After decentralization and the formation of specific Product Departments, these product specialists in Apparatus Sales assumed, in general, an additional role. In a sense, they were regarded by the respective Product Departments, and for that matter by most of the regional sales management, as unofficially "sales managers" for their specific lines. They were members of Apparatus Sales; they reported to Apparatus Sales management; yet, they did have a natural allegiance to the product lines in which they specialized.

In about the middle 1950's, the product specialists who had previously been assigned to various districts managers in the field selling organization were placed in a new regional organization structure known as "product sales," under a "regional product sales manager." Hence, in a sense, they became regional staff people, but with their own sub-organization within the regional organization. In a sense, this was done to alleviate some of the criticism of the Product Departments of Apparatus Sales. However, in another sense it boomeranged against the Apparatus Sales management. The Product Departments unofficially began to regard these product specialists in the field selling organization as "their own people." And, they attempted in a number of ways to influence these Apparatus Sales Division product specialists to ally themselves conceptually with the Product Departments and divorce themselves, conceptually, from Apparatus Sales. A sort of "Trojan Horse."

This was not difficult to do, because during the period of decentralization and even into the late 1950's many of the key marketing managerial positions in the Product Departments were filled by the Product specialists in the field selling organization. There had been a high rate of mobility of product specialists from Apparatus Sales to managerial positions in the Product Departments. Obviously, the produce specialists--particularly the younger ones--placed great importance on the maintaining of cordial relations with the Product Departments they represented for the sake of future advancement opportunities.

One former Apparatus Sales product specialist, now a sales manager in a Product Department commented on this process as follows:

The product specialist in the field had a sort of ambivalent job. He was working for Apparatus Sales and yet because he specialized in certain products he felt a sort of allegiance to the Product Department operation. I was definitely aware, when I was a product specialist back in about 1956, that the Product Departments were not happy with the Apparatus Sales organization. This awareness came about in many ways. Whenever the Product Department management people came into the field for meetings or for customer visits we specialists spent a great deal of time with them and traveled around with them. It didn't take long for me to realize that they regarded us, the specialists, as more or less their own people rather than Apparatus Sales people. And, of course, it was political for us to consider the same thing. I don't think I could cite specific cases or make exact quotes, but certainly the Product Department people in their contacts with us led us to believe Apparatus Sales was behind the times, and that it was just a matter of time before the Product Departments either took over the entire selling operation themselves, or for there to be a drastic reorganization

of Apparatus Sales. On many occasions the Product Department people spoke disparagingly of our own regional sales management and of Apparatus Sales in general. They indicated that there were quite a few sales engineers (and here the informant names several sales engineers in a certain region by name) who were not performing adequately. Then too there was a lot of discussion about job levels. I think that the Product Department people were antagonistic about the relatively high levels which many people in Apparatus Sales were able to achieve. You remember that at that time as a young specialist I had the opportunity of progressing quite high in job level, whereas some men in the lower managerial ranks back here at the Product Department definitely had feelings that even as a product specialist I could surpass them in level and compensation. Of course, this is different now, but it was a sore spot with the Product Departments then.

As a product specialist, we used to attend specialist meetings back at the Product Department a couple of times a year. These meetings, as you know, were attended only by Product Department personnel and the product specialists in the field. There is no doubt that the Product Department used these meetings as a vehicle to stir up unrest among the product specialists. I admit that I myself began to question the Apparatus Sales Division. Not particularly any of the management specifically, but the system itself.

A regional product sales manager--the regional staff executive in charge of the product specialist operation--commented:

I know darned well that the product specialists, particularly the younger ones, were playing the Product Department game. I won't name any names, but I know definitely that a couple of my product specialists were openly critical of our regional management operations in what they thought were private and confidential discussions with Product Department management. Of course, this later got back to me. I really do not blame them for this--they were simply being opportunistic. If there is any blame it is on the Product Department management, because I believe they were using the product specialists to gain a foothold into Apparatus Sales and to

enhance their criticism of Apparatus Sales. They could turn to their own division and group management and say "You see, even our representatives in Apparatus Sales are critical of the Apparatus Sales operations."

Coalitions.--Some of the tactics described above were initiated and engaged in separately by separate Product Department management people--particularly the Product Department marketing managers. Over time, however, these marketing managers began to "get together" and coordinate their critical activities. Several of the above quoted comments indicate this. This was particularly done in the exercising of veto power discussed in the next paragraph.

Veto power.--Up until the period being described (1955-1958) Apparatus Sales virtually held complete authority for the selection of managerial and other key positions within its own structure. That is, if a regional manager were to appoint a new district manager, he would select his candidate, and secure approval for his appointment from his own headquarters (which was almost always granted).

The power and the high status of the Product Department marketing management system, however, began to erode this Apparatus Sales authority, beginning about the middle 1950's. Becoming aware of increasing criticisms of Apparatus Sales by the Product Department general management, Apparatus Sales executive management became acutely sensitive to

personal relationships between its own management group and the Product Department general managers and their marketing managers. Whether Apparatus Sales executive management was forced to begin submitting recommendations for managerial appointments within its own hierarchy to the Product Department management, or whether it was simply done as a defensive measure, we do not know. We do have much evidence however, indicating that beginning about the middle 1950's Apparatus Sales top management began to abdicate its authority on managerial appointments. Hence, whenever a new regional manager was named, or for that matter district managers and even certain key sales engineer positions, a list of proposed candidates was submitted to relevant product department management for comment. For some time, even as late as 1959, Apparatus Sales executive management stoutly denied that any direct influence on selection of personnel--that they were merely asked for their advice. However, one high level Apparatus Sales executive told us:

The reason that Mr. ----- did not get the position of manager of ---- was that three important Product Departments blackballed him.

From the Product Department side, here is a comment from a Product Department general manager in regard to Product Department control of selection of Apparatus Sales management personnel:

I think probably our dissatisfaction with Apparatus Sales started before we had any degree of say-so about Apparatus Sales personnel. But when Apparatus Sales finally did contemplate some degree of management specialization, we did have the opportunity to indicate our feelings about candidates for the district sales managers positions. We would receive from Apparatus Sales headquarters a list of men being considered for sales positions in which we had interest, and we gave our comments on each.

When asked if this meant that he had the right to veto these candidates and also a right to make additional suggestions for other candidates, this Product Department general manager replied.

The answer is yes to both questions, although in some cases it was done somewhat informally. But yes, I would say that we had a degree of power of selection of people in Apparatus Sales.

When the marketing manager of another Product Department was posed with the question, "Is there any foundation in the statement that Product Department management--general managers and marketing manager--maneuvered themselves into a position whereby they were able to exercise veto power over the selection of Apparatus Sales management personnel," this marketing manager replied:

Well, I would say that if Apparatus Sales wanted to appoint a new regional manager or district manager, the Product Departments of our division would have a chance to look over the list of suggested names for this position as submitted to us by the Apparatus Sales headquarters. If there was an Apparatus Sales individual on this list whom the Product Department general manager or marketing manager did not like or did not feel was a "member of his team," that guy was dead.

Reflecting the Apparatus Sales managements viewpoint of this, a district manager in a region commented:

There is no question but that the Product Departments had as a minimum the right of veto of selections of management personnel in the Apparatus Sales Division. As I have mentioned before, this led to the necessity in the minds of sales management people that they had to spend a lot of effort in selling themselves and their groups to the Product Departments. This affected their decision making. The field sales manager had to keep one eye on the market place and what he thought he ought to do, but the other eye on the Product Department managements, with a view to their reactions and appraisals of him. And, of course, the manager couldn't afford to be wrong in the latter case.

A regional Apparatus Sales manager commented as follows:

The formation of Product Departments under decentralization was without question, in my opinion, a very necessary thing for the company to do, as it continued to grow and expand and compete vigorously in the field. The big problem came from the failure of a lot of people to realize that all this decentralization set up a whole new set of ground rules and signals on how people in the company were to deal with one another. What I mean is, it simply made it more essential than ever to keep close personal contact with the Product Department people. You know what happened in the ----- end of the business--there was no question but that the general managers of those Product Departments were in the saddle and calling the shots. It was simply mandatory that Apparatus Sales people had to develop a close personal relationship with those Product Department managers.

Although the Apparatus Sales people were held accountable by their own management, the Product Department management people who were really outside the Apparatus Sales organization actually did have an effect on appraisals, ratings, and even the future progress of Apparatus Sales people. Now let me stress I am not advocating "politicizing." You know what I mean. Those Product Department people had their own accountability to top management and it was obvious they were going to insist on certain things being done in the sales end of the business over which they had no control. Actually, it turned out they pretty much did have control. It came down to a matter--either you

were on their team or you weren't. And, if you weren't, you were in trouble. The Apparatus Sales manager who bucked the Product Departments was destined for trouble; on the other hand the one who operated in manner satisfactory to the Product Departments gained their respect and their cooperation. In this way he was able to manage his selling operation more effectively.

It is common knowledge that the Product Department management exercised some veto power in the selection of Apparatus Sales personnel. Particularly in the last big reorganization of 1960, it was very obvious that the selection of individuals for managerial positions, if not actually dictated by the Product Departments, certainly had to have Product Department approval. This points up what I have been saying--the necessity for continuing to keep good relations and close understanding with the Product Department people.

When asked to comment about the power of the Product Departments in dictating selection of Apparatus Sales management personnel, another regional manager stated:

Well, I do not know. I was not then in a position to know about such things. However, I think it is safe to say that no important sales management job in the regions would be filled without at least the Product Department blessing. This is quite different than it was prior to decentralization. Then, a regional manager may have selected the man he wanted for one of his sales managerships and may have checked in with his own top sales headquarters, but he was pretty free to make the appointment as he saw fit.

When asked what responsibility he would have in naming his own successor were he to move on from his present job, this same regional salesmanager replied:

I wouldn't have anything to do with it. Oh, our headquarters might ask me my thoughts, but basically they would come up with a list of candidates and then probably would ask for additional suggestions from interested Product Departments. The final list of candidates would then be circulated to the major Product Departments for their comments.

In further questioning this regional sales manager was asked, "Does this mean that if either the Product Department general manager or his marketing manager disagreed with the selection or proposed selection of any of the candidates, that candidate would probably be eliminated from the list?" The regional sales manager replied: "You've got the picture."

Summing up, the Product Department general managers after a period of organization and consolidation in the early period of decentralization found themselves facing a serious dilemma. Their executive charters were broad; they received under the concept of decentralization vast decision making authority. Together with this, they were held strictly accountable for performance toward predetermined objectives. Yet, although they had a high degree of control over virtually all of their operations, they lacked this control in the vital area of field sales, where the Apparatus Sales Division had been retained as a selling agent, or a "pooled" organization serving many Apparatus type Product Departments.

A struggle for power and control ensued, taking many forms. Product Department general management and its marketing management secured increasing degree of control over sales budgeting, sales expense budgeting. They became openly critical of Apparatus Sales operations and threatened to break away and establish their own selling organizations.

They began a series of formal studies of selling operations with an overt objective of establishing their own sales channels; they forced reorganization studied to be made by Apparatus Sales Division within itself. They worked to secure Product Department allegiance on the part of their product specialists. They openly and admittedly engaged in favoritism and disfavoritism of selected Apparatus Sales management and key sales personnel. They banded together to a degree in doing all this. Finally, and probably most importantly through their power and status, they achieved a large measure of power and control over the selection of Apparatus Sales management personnel.

At first these behaviors on the part of Product Department management were observed only at top Apparatus Sales management levels. In time, however, Apparatus Sales people throughout the hierarchy became increasingly aware of the pressures being extended by the Product Departments against the status quo of Apparatus Sales. The initial reaction of the top executives of Apparatus Sales was one of resistance. To their credit it must be stated that they were executives of a world-famed selling organization with a rich history of competency--the envy of its competitors and with extremely high prestige and respect throughout industry and the market place. There was a rich tradition behind the organization and its leaders. But in attempting to resist the pressures of the Product

Departments for change--particularly in view of the fact that Apparatus Sales executives were well aware of the power-seeking aspects of these pressures--the apparent decision was to resist change of any major character. Of course, as described before, minor changes in the organization structure were made, but every effort was exerted on the part of top Apparatus Sales management to retain Apparatus Sales in a status-quo. This merely threw fuel on the fire as far as Product Departments were concerned who proclaimed such resistance to change as specific evidence for the need for change. Perhaps Apparatus Sales top management at the time underestimated the power and strength and status of the Product Department managements or possibly overestimated its own strength--we are not sure of this. It is clear, however, from observation and from reports from Apparatus Sales management personnel that this resistance ultimately became quite defensive in character. Thus, by the time the rank and file of management in the regional operations became aware of the Product Department power maneuvering, the defensive attitude rapidly infiltrated many of the management sectors of regional sales. Some of this has already been evidenced by the foregoing quotations from regional sales people. Following are some additional comments from Apparatus Sales personnel with respect to the changing character of the Apparatus Sales organization and changing perceptions of the Apparatus Sales managerial positions.

A district sales manager:

A short time after decentralization, when the Product Departments were formed, the character of the sales management job in the field changed radically. And, it changed because the Product Departments began to run things in their own way, and became extremely autocratic. This means that we were no longer able to do things as we saw fit, no longer had a court of appeals at our own headquarters (these people began to let us down) and after some degree of time lag, we found ourselves here in the field under the dictates of the Product Departments. You know how the Product Departments began to operate. They were getting more powerful and more powerful and growing big for their britches. Further, you recall that levels in salaries of many of us in the field were higher than some jobs in the Product Departments and made them determined to try to get Apparatus Sales under their own control. Further, the Product Departments began to gun for certain people in Apparatus Sales. You know what I mean--you know what happened if a regional sales manager got on the black list. It was just a matter of time until he was relieved of his assignment and this sort of thing had never happened before in the company. I strongly believe that there is a question of morality here.

By that I mean that as a result of decentralization, and the growth of stature and power in the hands of the Product Department management, much of the management of the company began to lose its consideration for individual people. I believe that individuals were not considered and that there was a ruthlessness in the manipulation of people. As a result, I think that a lot of us simply didn't know from day to day whether we would still have a job the next day, and that we had no defense against this. Further, I believe our own headquarters was immoral in that they did not stand up to the bar and insist on fairness and morality. I think that top management and product management during the period of decentralization became cold-blooded, and though only of business values and increasingly less of human values. And, I think that this might have destroyed the company. I admit that the situation is much better now than it was a year or two ago. The Product Departments now seem to be working through us rather than dictating to us.

You know how it was a comple of years ago. The Product Department would call up and make certain demands. Now they call and ask our suggestions on how to approach certain problems.

There has always been a great deal of resistance on the part of sales engineers and on the part of most of us district managers to the closer and closer specialization which we were forced into. I think it is safe to say that the average sales engineer does not like it. However, it is beginning to appear that this degree of specialization has gone too far and we will probably be regrouping and recentralizing and coming a little bit closer to the old method, with sales engineers ultimately handling a larger product mix.

A vice president of the company commented:

Yes, the Product Departments certainly did try to force changes in the structure and operation of the Apparatus Sales Division. The top Product Department management had the ear of executive management, and I think it became much taken for granted by executive management that some kind of changes in Apparatus Sales had to occur. I feel sure that Apparatus Sales initially resisted this. I believe that it was a very frustrating time for Apparatus Sales management. From my knowledge, I am sure that Apparatus Sales management both at headquarters and in the field were well aware of the fact the Product Department managements were working toward some change in the Apparatus Sales structure and that they did everything they could to prevent it--to no avail.

A regional sales manager stated:

The company today is a pure bureaucracy. To succeed you have to be a bureaucrat. There is a specific organization--there are rules--there are checks against you. Jobs are well spelled out, but the interpretation of the spelling out can vary from manager to manager and the signals can change in spite of the spelling out. I don't mean by this that there is still significant flexibility in many managerial jobs. I think that the manager's job in the company today is highly mechanized and routine and that he is much more of an administrator than he is a manager. Even though my position

carries considerable responsibility and authority, I certainly feel that it is mechanized and programmed. And, it may not have as much authority as you might suspect. I think I am much more beholding to my immediate superiors than my counterparts were a generation ago.

When asked if he felt that, when making major decisions in the field operations, he must factor into these decisions the resulting reaction of people in the Product operations, this same regional manager replied:

Yes, that is the way of life now. It is much different than it was say in the 1930's. The regional managers in those days might or might not check some of his decisions with people in Schenectady, but even if he did he would still go ahead and do what he wanted to do. Today it is different--the regional manager must be careful to check out with a number of management groups or he is likely to find himself in disfavor. It is much more necessary for a manager today to consider his security than it was in the past. Further, although the regional manager makes much more money than his counterpart of a generation ago, his prestige actually is smaller than it was in the past. That is, prestige within the company. After all, back in the 1930's with the sales end of Apparatus Sales really running the entire show, only a handful of people--that is the twelve or thirteen total regional managers plus the Top managers in Schenectady, were the key managers in the whole organization. How many are there? A hundred perhaps. And, the Apparatus Sales as it exists today doesn't even call the shots anymore. Rather the shots are called by the Product Department people. No, I think that prestige of this kind of position is considerably lower than it used to be. In continuing to discuss the events of the late 1950's culminating in the reorganization and fragmentation of Apparatus Sales, this same regional sales manager continued as follows:

The Product Department managers, in the middle 1950's, not only demanded but forced the changes which occurred in the late 1950's within Apparatus Sales. Sure, this was done partly for the sake of a better approach to the market place, but there were other factors involved.

As I mentioned before, I believe that the Product Department offered opportunities for material advancement. I believe that this is a reflection of the organizational upheavals we have been through in the last five or six years.

When asked about his feelings about changes in Apparatus Sales management jobs as a result of all the conflict described in preceding sections, a district sales manager in a large region commented:

I think that the major change has been in the over-stressing by executive management of the concept of professional management. I think there was a feeling in the minds of executive management and Product Department management that the former Apparatus Sales Division management were flying by the seat of their pants. I think that we were much better than they gave us credit for. But, from about 1950 on, I think that there was a tendency to over-stress the professional aspects of management and understress the human elements of management. Higher management became more rational, more cold-blooded, and more objective. I can understand this; this was probably necessary because of the change from the old functional type of operation to the product operating department operation and therefore because of the business management approach necessary for the running of the Product Department. I have been in this kind of position for ten years or so, and I have a lot more pressures today, much more administrative content to my job, much less customer contact, and much more internal selling. By internal selling, I mean that in my job I have to be sure that my entire component and I are satisfying the Product Departments we serve. In my job this has become even more important than selling to the customer. That is, I spend a disproportionate share of my time in contact with Product Department management, selling them on our ideas and protecting my people.

By protecting my people I mean that because the Product Departments had many demands on our performance and because of the lesser considerations of human values, if in the eyes of the Product Department management some jobs are not adequately

being performed--even though actually they might be being performed very well--the people in those jobs are subject to criticism and their managers are pressured to make changes. Hence, to protect my own people and to remove them from this area of pressure, I feel it mandatory that I act as a buffer, possibly take the criticisms of the Product Department personally, and try to sell the Product Departments on our operations. I believe in human values, and am not cold-blooded. This may have been a source of difficulty for me in the organization.

When asked how he thought the Product Department achieved the position of being able to gain control over Apparatus Sales, this same district manager replied:

Everything that the executive staff did during the reorganization period in the early 1950's was pointed toward the building up of the power of the Product Departments. They simply inherited this position of authority in the company. But after inheriting it, they began to make their appraisals of the selling organization cold-bloodedly and they overemphasized measurements of performance. I have always insisted that one can not adequately measure the performance of a creative selling organization in a technical business. There is absolutely no way to adequately qualify our performance and our activities today, and the value of these activities for future business.

This same district manager was then questioned about his perceptions of the Product Department management's efforts to gain some measure of control over Apparatus Sales. He commented:

During the period you speak of I heard a number of Product Department general managers openly state that they were considering withdrawing their support of Apparatus Sales, pulling out of it, and setting up their own direct controlled field selling organization. As a matter of fact, several of them did precisely that. This put us in Apparatus Sales in a defensive situation. But, it was a situation

which we simply couldn't win. I think the Product Department management gained the strength to do this through the concept of the professional manager.

It was a fact that Product Department managers back in the middle 50's had little black books and assessed some apparatus field sales management as being on their team, and others who were not. I think there is no question but that the Product Departments secured a power of selection of management personnel in Apparatus Sales.

This period of conflict from about 1955 until the late 1950's culminating in 1960 in the drastic reorganization and fragmentation of Apparatus Sales shook the traditions and symbol systems of this great organization severely. In our conclusions, we shall propose that predictions could have been made of patterns or clusters of managerial behavior--both those of the aggressive Product Department management, and those of the defensive Apparatus Sales management.

Suffice it to say here that the dynamic changes in the product operations sector of the company, on collision course with the tradition-based Apparatus Sales sector, resulted in social system changes within Apparatus Sales itself. This great social system even before it was organizationally restructured found its symbols, its traditions, its perceptions and concepts of roles crumbling. For those older men in the Apparatus Sales organization--those who had been the company for twenty years or more and this included most of the management group--there resulted a period of fear and anxiety and of defensive behavior. It

was our personal observation in social contact with many of these men--not restricted to one sales region--that there was a rather hopeless feeling that the proud organization which had almost been mother to them was inevitably doomed to disintegration. The non-rational, emotional belief systems which had been inculcated to these men's frames of reference was no longer of any meaning for them.

How these men adjusted and how the old social system which was Apparatus Sales has evolved into something new will be discussed in Chapter XVII.

A high level executive of the Apparatus Sales Division, now retired, significantly commented as follows on the period of conflict between the Product Departments and Apparatus Sales during the period of approximately 1950 to 1960:

Decentralization started in 1950, and set up autonomous Product Departments and this build up led to conflict. Product Department management were put in a position where they had to seek power and authority. The feeling on the part of Apparatus Sales people today that the situation has been somewhat resolved is simply an illusion. This present situation, in which the conflict seems resolved, is simply a lull. There will always be conflict as long as the field selling operation is separate from the Product Department operation.

The Product Departments insisted on change. However, they would not hold long enough to permit us to do anything, but continued on insisting on still further change. I recognized that the very structure of the company after decentralization results in growing pressures on executives and on the Product Department management people. It put them in a position where they had to view their positions in a political sense, in a power sense, but with technology and the industry growing rapidly, the great strength of the company in its ability to approach technological problems in the

market place on a systems basis. Our engineering of complete power plants, complete automated steel mills, etc. gave us tremendous advantage in the market place. In spite of this, because of decentralization along product lines, most Product Department general managers and product division vice presidents thought of the product approach only. This was shortsighted. Further, these men well knew the strength of our systems ability but were forced by the organization structure to think in terms only of their specific products. They reacted accordingly, and technology might have suffered.

I admit that in Apparatus Sales our planning was poor. We were required, of course to develop long range planning--to look ahead four year, five years, ten years. But this was given lip service by most the Product Department executives, and for that matter by us in Apparatus Sales. After all what really counted was today's results--our current profit situation, our current cost programs, etc. This was really shortsighted--but again the organization structure and the demands placed upon executives in the structure reinforced this shortsightedness.

In the seeking of power, certain Product Department managers and Product division executives became "down" on certain Apparatus Sales management people. When this happened, we could not promote our own people; there were frozen. For example, I found as a top executive of Apparatus Sales that it was impossible to promote a district manager to a regional manager if for any reason that district manager was not on the "approved" list of Product Department managers. The company needs to consider human values more seriously. There was a time, of course, when the human individual was the prime consideration in the company. This is no longer the case in my opinion. Of course, it is hard to do this, to really consider the so-called human value because of the organizational set up and because of the very objective way in which performance and jobs is being considered in the company today. As a result, I think that there have been a lot of management people in the company and particularly at top levels who have simply not stood up for human principles as they should have. I feel certain that in a great many cases during this period of decentralization and during the time in which the Apparatus Sales Division was being shot at by the Product

Department management that there were many managers who really inwardly had a sense of human values and principles but who did not step up and insist that they be followed. In my own case, I feel that all my life I have had for myself certain principles and I have never budged from them. Actually this may have caused me some difficulty in the company because I would not compromise my principles. There was a lot of political maneuvering going on at the executive level in the last few years and I would have no part of this. Again I say that the organization structure and the so-called professional or scientific management ideas encouraged--even made it mandatory--that human values and principles of good human relations be compromised.

Of course the company had to decentralize. Certainly after World War II, the tremendous increase in the economy in general and particularly in our kind of business which lay ahead, and with the tremendous growth of technical knowledge, the old set up of the company was simply too cumbersome. Decentralization basically was an important and necessary step for the company. But, they went too far. The ideas of setting up completely autonomous independent businesses became so much a dogma that some people seemed to go hog-wild on it. The degree of decentralization in my opinion was almost ridiculous. There was a considerable duplication of general management of the marketing functions, of purchasing, and so forth. I hesitate to say how much it has cost with a questionable amount of increased net business. I have taken strong stands against proposals which obviously carried decentralization too far. It seemed to me that originally when decentralization began there was a great deal of questioning about it in the minds of many of the management; but after decentralization became a way of life in the company, the flood gates were open and product people had the tendency to go completely overboard. Another important point about decentralization. A lot of management people, at least at the outset, did not buy the idea of decentralization but they went along with it. Here again, they didn't stand up for principles. Hence, we all got caught in a mesh. Still another difficulty which really stemmed from the idea of decentralization and the so-called principles of professional management was the great stress placed on setting objectives, and then upon measurement of performance in regard to the degree

of achievement of these objectives. Now this is desirable. But the trouble with executive philosophy in the company during the 1950's was that the objectives were set, to be sure, and measurements were refined to measure performance. As I mentioned earlier, a lot of these measurements were set up in such a way that they measured what the management wanted them to measure. But, the difficulty was that there was not an adequate means built into the objective and measurement system to allow for adjustment if the performance were off. More importantly there was not adequate realization that sometimes the objectives themselves had to be changed. No adjustment was permitted in my opinion. A target was set and by-golly, that was it. It was taken as gospel. For example, some of the objectives which were given to Apparatus Sales by the Product Departments turned out to be quite impossible. Yet, no allowance was made for adjustment of these objectives--and this resulted in a lot of unfair criticism and conflict. Now I begin to see some evidence that this extreme rigidity of holding to some selected objectives is being softened somewhat. I think we would be shocked to know how much decentralization has cost. Now bear in mind that I thoroughly agree with the fact that we had to decentralize, but I wonder how much profit the company has lost in over-decentralization. For example, in our last reorganization of Apparatus Sales, do you realize how much it cost in actual dollars, not just including the time of people? If cost two million dollars. And this doesn't count the lost time of managerial people in merely thinking about and arguing about the reorganization period. Thus, in tinkering with organization, we must remember that we are not only tinkering with human individuals, we are also putting a lot of money into the process. Certainly this is an important investment in many regards; yet, I personally feel that a lot of the organization change was done for the sake of change only, without any real knowledge of the net return in profit to the company. Organization change may become a way of life for awhile, as a sort of end objective in itself for many management people.

You can't forget people. You can't look at organization, at objectives, etc. without also considering personalities. The dogma of professional management as preached through the executive training programs did not provide adequate stimulus to management to

consider the people's side of things. True, some of the written objectives of all the product business are stated as involving the people's side of things--as you read the company literature you will find some very lofty statements about the individual. Yet in the actual practice of management under the principles of planning, organizing, integrating, and measuring, this concept really looked at people only as the manager looks at any of his resources. I am talking about personalities of management themselves. Consider some of the interesting personality effects on the whole operation of the company. Consider what has happened when certain individuals were appointed as group executives or division vice presidents. As each different personality moved into one of these jobs the whole attitude and operation of the entire operation beneath him changed, became different. You can't tell me that you can rationally structure an organization under the principles of professional or scientific management without considering the personalities of the executives as they come in and out of that organization. Another thing about people. I don't think our top executives have adequately considered the fact that people are human and make mistakes. And I think that this was a mistake on the part of our executives. Organization structure, organization aims and purposes, and organization operations were neatly structured on paper; the so-called principles of management was developed; jobs were spelled out; the scope of operation of departments, groups, and individual persons, were spelled out. And yet, people are fallible--the concepts don't always work--mistakes are made--people view things in different ways. So the great marketing concept and the great concepts of organization that were developed in the decentralization period were simply not utopian; fallible people held key decision making jobs.

CHAPTER XIV

REORGANIZATION OF APPARATUS SALES DIVISION

In Chapter VII we briefly described the ultimate reorganization of Apparatus Sales in 1960, from a formal organizational structural viewpoint only. This reorganization split Apparatus Sales at the top executive level into two separate selling organization, The Electric Utility Sales Operation and the Industrial Sales Operation. Throughout the entire regional operation, the organization was likewise split into Electric Utility Sales Regions and Industrial Sales Regions; additionally in the field a third set of sales regions was established, The Agency and Distributor Sales Regions, these regional managers reporting to the manager of the Industrial Sales Operation at headquarters. Thus, there was a fragmentation of the "old" Apparatus Sales Division. This must be viewed, however, in its total context to understand the social implications of the reorganization.

During the late 1950's--particularly from 1958 to 1960--the organizational alignment of Product Departments, divisions, and groups had been considerably shuffled. Thus, by the time of the reorganization of Apparatus Sales, groups and divisions, and the Product Departments assigned

to divisions had been realigned into compatible "families." For example, by 1960, and "electric utility group" had been formed with a group executive vice president in command; this group had assigned to it those divisions and product departments whose major markets were the electric utilities. Similarly, the industrial group had assigned to it those divisions and product departments whose major markets were the industrial customers.

The splitting of Apparatus Sales into electric utility and industrial operations, and the assigning of these to the electric utility group and to the industrial group respectively, therefore, organizationally aligned the smaller parts of Apparatus Sales with compatible "families." Thus, though the product departments still lacked direct and formal control over the selling organization, at least this sales organization split and the assignment of its parts to the various groups placed the sales function in this compatible "family."

Of particular importance is the higher degree of specialization within the newly organized sales operations. This higher degree of specialization applies to management and to individual sales engineers in the field sales operations. For example, the Electric Utility Operation, immediately below its executive, is split two ways—one group specializing in the sale of apparatus for the power generation and transmission applications in the electric utility

market, and another group distribution type products to the electric utility market. This split, of course, not only follows electric utility customers' way of doing business, but importantly also follows the specialization of product scope by the product departments. That is, within the Turbine Division of the Electric Utility Group, several product departments manufacture only turbines for power generation; within the Transformer Division of the Electric Utility Group, one product department manufactures large power transformers used in the generating stations of the utilities whereas another product department manufactures distribution type transformers, still another product department manufactures meters, etc. Thus, the specialization immediately below the top level of electric utility sales operation further specializes the apparatus selling function to be closely aligned to individual product department operations. We assert that this specialization gives these product departments, informally at least, a higher degree of control.

Outside the Electric Utility Sales Operation headquarters, the regional operations are also specialized. The regional managers, reporting to the manager of the Electric Utility Sales Operation, are, like the latter, assigned total responsibilities for sale of apparatus products to electric utility customers. But, immediately beneath the level of regional sales manager of Electric Utility Sales, the district managers are again specialized.

This specialization was similar in the Industrial Sales Operation, although the degree of specialization was not quite so high, particularly at the sales engineer level. But, even here, the effort was made to increase the amount of specialization. For example, for such a customer as a large steel company, whereas formerly there was one sales engineer who had at his beck and call a number of product specialists to assist him, now, there was one sales engineer assigned to handle the power distribution equipment for the steel mill, still another to sell, still another to sell motors and control, etc. However, this was the "ideal," and it was not reached in many cases.

The attitude of the field sales management and sales engineers to this reorganization and to the higher degree of specialization were generally those of objection and resistance. District managers and sales engineers perceived all this as a narrower scope of responsibility, and perceived it as making them beholden to a very few departments. Many district managers and sales engineers felt, and have stated, that the reorganization and the new concepts of the highly specialized

selling job was tantamount to the product departments "victory" over Apparatus Sales and that essentially the product departments really had "taken over" Apparatus Sales. One highly competent sales engineer with about fifteen years experience, and whose salary level was approximately \$16,000, and whose job had been much more highly specialized with regard to product, commented as follows:

It's just not as much fun anymore. I always felt that I really was somebody before this reorganization. I felt that I had the power and the authority to negotiate business with a customer, to be responsible for the contact of customer's top management. Now I don't get to see the whole picture. I used to think that it was really true--that sales engineers were "executives" in character. Now I think I am just a mechanic.

Many regional and district managers also share this view. One district manager commented:

Prior to the reorganization, I felt that I was really managing something. The sales engineers reporting to me were responsible for high level customer management contact, for negotiating business, for laying out strategies and plans, etc. In my position then I felt that I could actually approach the management job able to spend considerable time on master-minding the sales strategies of all my sales engineers, etc. Now, however, my sales engineers, specializing by product, cannot do this. Consequently I find that I am doing many of the things that they used to do, or at least trying to. That is, now I have to assume the responsibility of negotiating business, closing large orders, etc. Of course, one can't object to this. On the other hand, I am not freed to adequately do this in as much as I have a great deal of administrative burden placed on me. In other words, I am doing even more in the administrative sense than I did before, plus the fact that I have additional direct responsibilities with the customer. Something is going to have to give.

A regional manager in the Industrial Sales Operation, when asked how the present positions of sales engineer and district manager compare with those prior to the reorganization, commented:

Things have changed a great deal and the old Apparatus Sales Division is much different than it used to be. There has been quite a change in the jobs of the sales engineers and district managers. For one thing, the sales engineer's job is much more specialized on product than it was. At least this is the way it is supposed to be although in certain cases we haven't gone as far as was intended. But in the old days the sales engineer was sort of king. He had a specific customer assignment; we had available for him product specialists on all lines of products and application engineers that were tained for systems approaches for his specific type of customer or industry. The old sales engineer was a negotiator, a strategist, a captain of the team. He called the shots. Now, the last reorganization has changed that materially. As you know, we no longer have product specialists and have broken the sales engineers job down into a number of jobs, each product oriented. This means that there isn't the team play, masterminded by the sales engineer that there used to be. Of course in many instances as I say, we haven't gone the whole way toward this and there is some indication that some of the product departments would like to return to the old specialist set up. You remember how the ----- department was so insistent that we eliminate the product specialist as a back up for the sales engineer and set him up as a full-fledged sales engineer himself, selling only his product directly to the customer. This was obviously done so that the product department would feel it had its "own man" in the field. Well, this hasn't worked out too well in every case, and now there are indications from that department that perhaps it might well want to consider changing back to the old product specialist set up.

This regional sales manager was then asked whether the pressure applied by the product departments to reorganize and to eliminate the old system of the broad-gauged sales

engineer with a group of product specialists at his disposal might not have been sincerely an effort on the product departments part to be sure that the sales operation more fully fulfilled the technical requirements of jobs in industries which were getting more and more complicated, technologically. The regional sales manager replied:

To a degree that might be true. But actually the pressures of the product departments for specialized selling was mainly, I think, to get people lined up on their own teams. After all, the technical content of the Apparatus Sales job has grown, but our former approach to it wasn't too bad. I think that what a lot of people forgot was that the sales engineer was more than a technician, he was primarily a negotiator. It's a moot point whether the growing technical requirements of the job are better satisfied by having one competent sales engineer heading up a team of specialists, or by breaking his job into product segments and having a number of highly specialized salesmen calling on the customer for their individual products. If the latter is done, the job of contact of customer executive management and most importantly the negotiating aspects of the job then have to fall to someone else. And who is that? It is the district manager. Now, it is the district manager who is "head of the team" with a corp of specialists (in a sense) under him. Really then the growing technical requirements can be met either way. It's simply a matter of which way to do it. To an extent, the district sales manager's function is quite like that of the sales engineer of the past. Of course, additionally he has a great deal of administrative responsibility which the old sales engineer did not have.

At this point, we should recall the comments made by another regional manager in the previous chapter indicating that he felt he had, under the new organization, considerably less freedom of action and authority than did his predecessors. Still another district manager, in the Electric Utility Operation, stated:

There has been a great deal of resistance on the part of sales engineers to this closer and closer specialization. I think it is safe to say that the average sales engineer does not like it. However, it is beginning to appear that this degree of specialization may have gone too far and possibly we might be regrouping and recentralizing a little bit.

Yet remnants of some of the old traditions still remain evident. Many field sales management and sales engineer personnel not only speak nostalgically about the "old" Apparatus Sales Organization, but many feel that the power of the product departments will run its course, and the "old" Apparatus Sales Division will again emerge--or at least something like it. Although the term "Apparatus Sales Division" no longer formally exists in the vocabulary of the company, members of this organization still refer to themselves as being "Apparatus Sales."

Of all the components of the company, the Apparatus Sales, just prior to its 1960 reorganization, still maintained its process of early sales training. Recruiting was done directly from the college campus into the sales training program rather from the old "test" pool; however, the structure of the sales training program has been retained, and is being used by both the Electric Utility Operation and the Industrial Operation. Sales trainees are placed on "test," have rotating assignments in various apparatus type factories, have their sales training courses, and ultimately proceed to field sales assignments--all much

as has been done in the last twenty-five years. Speaking of the disadvantage of the elimination of the "group" test program by all components of the company other than Apparatus Sales, a sales training executive commented:

If a young man is interviewed at college level he must make a decision whether or not he wants to enter engineering or sales. If he enters engineering, he is placed directly with one of the engineering sections of a specific product department without going through the old "pooled" test experience. There are some definite disadvantages both to the company and to the individual in doing this. Of course the Company is getting much larger and is decentralized--which in my opinion is all the more necessary for young men entering the Company to get a balanced, over-all picture of the company's operations. By placing them directly into a product engineering operation the Company's ability is eliminated to give them this all around picture--as we used to do when everyone was on the test program for at least a year. I think that it is too bad that the common experience of the test program has been eliminated. We in sales training, of course, have tried to maintain a number of test assignments and still place all of our sales trainees on at least one of these assignments. But now, of course this provides a common denominator only for our own sales trainees and does not give them contacts with people who will ultimately be in the engineering functions of product departments not does it give the engineering trainee the opportunity to become acquainted with the other aspects of the company. No, I think the idea of decentralization and specialization carried to the initial training program loses something for us.

Of course, we have to specialize somewhat. Now even at the outset, a young trainee must decide first whether he wants to go into sales work before he can even be in the program. Then he must quickly make the decision what area of selling he wants to go into. If he elects, for example, to go into generation sales ultimately in the regional operation, we then devise a set of rotating assignments for him in say the turbine departments to prepare him for this. On the other hand, if he elects to go into industrial sales

work, he has to make the decision between heavy industry and light industry. If he wants to go into heavy industry--say steel mill sales--we formulate his program accordingly. On the other hand, if he wishes to go into industrial sales in the light industry or into agency and distributor work, we have to formulate still a different set of training assignments for him. Thus, even in his early training days there is a larger degree of product and sales specializations. He doesn't have the change to "look around" as trainees used to.

There is less chance for movement from one area of sales to another than there used to be. As you know, regions may have hired young men with an industrial background for industrial work in the regions, but even after going to the regions there was still a district training period during which time the regional management could look at the men and he could look at jobs, and still didn't have to specifically make up his mind whether he was going to enter a specific type of industrial selling. Now this is all more prefabricated. Decisions a young man makes very early in the training program will structure his next few years to a much greater degree than they used to in the past.

When asked if young trainees in the sales training program see conflicts between product department's operations and field sales operation, this informant stated:

No, I don't think so. Of course with hind-sight, if we were to enter the program today we would definitely see such conflicts. However the young men entering the company under completely different conditions than you and I did have none of the background of reorganization and change which we have encountered, and simply take for granted the difference in organization and philosophy between the product departments and field sales. They still see opportunities ahead in either field and readily adapt to the organization. I suppose we would say, looking back, that their opportunities are just as great but in narrower, more specialized areas of work. They, of course, do not know the past and therefore happily make their decisions and their selections of fields of work and go about their business.

Another headquarters manager of the Industrial Sales Operation, commented as follows regarding the higher degree of specialization in managerial and sales jobs:

I suppose I am old fashioned but I think we have lost something in that today the individual technical person thinks of himself as being a member of some component rather than a member of the company. There was something about being a General Electric man which we have lost. Now we think, I am a transformer man or utility man and so forth. Our allegiances therefore have been divided and specialized just as our jobs have been, and I have the feeling that in the long run we have lost something.

CHAPTER XV

THE PRESENT MOVING INTO THE FUTURE

So, the decade of the 1950's was the period of the great decentralization--the reorganizing and restructuring of the company's executive, staff, and operating structure. Additionally, this was a period of great change in managerial philosophy and ideology. Operating decision making authority was decentralized and delegated--yet, with tight executive control through short channels of communication and significantly through a highly quantitative set of performance measurements. More and more power was centered in a relatively few "headquarters" centers.

Beyond this, this was a period of great change in the social structure. The old "family" traditions which had grown up in the previously centralized functions dissolved. The symbolic rituals in these old hierarchies began to dissolve. The symbolic rituals in these old hierarchies began to disappear and with them, the meanings attached to organizational life of the times. A pervasive sameness in role perception emerged. The meaning of jobs became highly specific and objective. A new management power elite emerged, centering power in a relative small group--again, each of whom was highly accountable to the executive.

One old bastion of tradition, the Apparatus Sales Division, survived these emerging changes for almost ten years, continuing to live with its many images of itself unchanged and with its traditions and symbol systems functioning meaningfully. But finally it, too, could not resist the forces of change impinging upon it from the outside--from the dynamically changing product operating sector of the company.

Many managers in the company feel that this period of great organizational and ideological fluidity is over--that there will now be some period of stability. "The house is now in order, and lets get about out business." But many forces are at work to make this present illusory moment of equilibrium already a thing of the past. Even now, the company as a social, economic, and technological system is becoming something else.

For one thing, the chief executive under whose dynamic force and vision the concept of decentralization was implemented has retired and great interest was exhibited throughout the rank and file of the company regarding Cordiner's successor prior to his retirement. It is important to note that this company does not utilize committee management, such as does a company like General Motors--meaning that with a change in executive, the new executive brings in his own new concepts and approaches. Accordingly, the entire component under him reflexes and reacts. This

is reflected in the comments of a high level executive in the company who spoke just before Cordiner's retirement of the reflexes in an organization emanating from a new executive as follows:

I am talking about personalities of management people themselves. Consider some of the interesting personality affects on the whole operation. A perfect case in point was the appointment of Mr. ----- as group executive of the -----division. You know him, of course, his previous job had been on staff, and he is an introspective engineer. He no more fits the -----business than my secretary would. Yet, as chief executive of this large division, by sheer force of his particular personality, the division managers and product managers in this group reacted and behaved differently than they had with the previous executive. Yet, all the principles of management taught by the professional management idea at Crotonville denies this. Then, after he moved on to another spot who took over as executive? Mr. -----, you know him well too. You know how completely different a personality he has than Mr. -----, his predecessor--and the whole attitude and operation of this large group thereby became really quite different. You can't tell me that you can rationally structure an organization under the principles of professional management without considering the personality of the executives. And if you really want to see something, wait until we get a new chairman of the board in a short time.

Throughout the halls of the Company and over the lunch table, much conversation flowed about the next chief executive officer. There were two heirs-apparent, although some management people felt that there may be a dark horse or two. These were strikingly different individuals, each tremendously competent and yet, most management believe, with very different approaches to the managerial process.

There was no question in the minds of management people that managerial concepts and ideologies will shift, depending on the new appointee. And, having recently experienced the upheavals of decentralization, management people in the company were now very aware, and had an air of expectancy about changes forthcoming from the new chief executive. There are differing viewpoints about the two "candidates." One was judged to be "people" oriented, the other, more job oriented, more results-oriented, and more "programmed" oriented.

One school of thought held that because of the upheavals of decentralization and the unhappy misfortune of the anti-trust situation, the next chief executive will be "more human" and more human-value oriented, placing more value on people.

Likewise, the executive staff groups have changed in character during the ten years of decentralization. Initially during decentralization, many of the executive staff groups had a large measure of "the authority of knowledge." But the staff functions according to most observers in the company seem to decrease in "authority" in the latter half of the decade. In about 1958, when the company embarked upon a vigorous drive to improve profits many of the staff groups were cut back in size. They are presently at a rather low ebb in size and the

importance according to some observers in the company.

One high level staff executive commented as follows:

There is in fact a slow change in the concept of these services (staff) as executive staff groups in the company. This is too bad. Smiddy's idea of the staff concept was brilliant, that is, the idea of teaching and advising and counselling. However, it appears to me that the company is drifting away from this concept, and is considering the executive staff groups merely in being not enough forward-looking. Under the previous concept, the staff groups in the company did in fact look well to the future, balancing the natural tendency of operational managers--in spite of admonitions otherwise--to look very much at present day to day results. Possibly one difficulty which the Services have encountered stems from the fact that the Services themselves have not had an input of the kind of competent personnel which they require. Under the old concept, individuals in the staff groups had to be expert in their respective disciplines. Unfortunately, as operational managers were removed from their general management positions, either because of inadequate competency based on the standards of measurements, or for any other reason, they were assigned as consultants to service Services components. As a result the Services had an influx of high level, highly paid operating managers occupying important posts in the staff groups but without either competency in the disciplines of staff work or without the philosophical concept of staff operations. These were merely worn out managers being kicked upstairs to the detriment of the Services.

Speaking of the imminency of a new chief executive officer in the company this same staff executive said:

Regarding the coming change at top executive level, I agree that when the chairman of the board retires, the new chief executive officer will be either Mr. A or Mr. B. I know there is a lot of discussion about who will make it but I don't think even the chairman knows at this time. Personally I predict Mr. A will be chief executive and chairman of the board with Mr. B probably as president and the general operating executive of the company. I base this on the background of the man and also upon what I figure the

needs of the company in the future will be. I would predict that Mr. A will take the long range view and will represent the company to the public; he will sell the need for profit, for strong corporate activity, etc. Further more even within the company I am sure he would sell the idea of our needing to be a "lean, competent company." Then, I would predict that Mr. B would be the man actually to do this, to run the company from an operational viewpoint in this concept.

But what the company is, its image to itself and what it will become in the future certainly will be very directly influenced by the character and personality of the individual who is the chief executive officer. Both the operating and the staff executives reporting to him certainly will take cues from him. The particular personality of the executive, wherever he is placed in the organization does definitely affect the way in which the organization perceives itself and the image it has of itself.

This staff executive voluntarily went on to say:

The company is still in a process of change. And, its change will be determined by changes in its environment--not only its external environment but importantly its own internal environment. And, with the decentralized concept in the company, how these changes in internal and external environment are perceived will depend upon individuals--individual executives--and how they personally perceive these changes. Thus, this company is much more reactive to internal and external perceptions of change, and more adjustive to them, than are many other companies whose organization structure is not based upon the individual and individual decision making. And, the company is ready for some "new looks" at itself, and this is now being done at staff headquarters. At executive level, there is being considered many studies of what the company really is and of what has happened in the past.¹

¹Our own observations at executive headquarters in 1962 indicates that there is, in the executive staff groups, a very scholarly approach to what the company is and what it is becoming. And, we predict a changing role of the executive staff in this regard.

With regard to the operating management itself, there is still a process of change evolving. The dogma of the managerial principles taught early in the decentralization process has relaxed. There is considerable more stress on technical competency. A high level staff consultant who has much to do with the company's executive development program commented as follows:

The concept of decentralization as it was implemented involved vertical chains of command without any cross ties. This resulted in social changes and changes in individual behavior whenever a new boss comes in. Simply because of this vertical chain of command new signals, new perceptions, and so forth occur simply based on the personality and behavior, as perceived by subordinates of the new superior. Whereas some companies as New Jersey Standard, DuPont, and General Motors to some extent, deliberately have committee systems to prevent the sometimes violent changes caused by a single personality, this company officially and actually rejects such committee systems. Hence, there can be violent swings in perceptions and behaviors even though the organization structure has remained unchanged. Of course, this gives individual executives and managers more control and it places a high value on control.

We have backed off the dogma of professional management. Much more emphasis is being placed today on the technical know-how of the business and the demands that this technology places on the general manager of that business. This, of course, reinforces the behavioral reaction within the vertical chains; as individual managers now perceive that mobility is being at least somewhat more restricted to types of business, and that very probably the wide mobility pattern is being somewhat narrowed, and as they begin to perceive that future mobility lies more closely within their own particular organization components, and with the vertical managerial hierarchy in that component being very much based on individuals, this means that the individual manager is taking his signals from individual personalities in the hierarchy

above his. This may explain some of the conflict you say you have observed between the interdependent components of the company.

It is an interesting thing to see how the company is shifting in its concept of professional management. If you were to plot on the same chart for both the company and for the Harvard School, the adherence to the idea of the generies of management on one axis against time on the other, the company curve would be rising rapidly until the late 1950's and then fall off. On the other hand, the Harvard curve would be horizontal through this period but beginning to rise in the late 1950's. I think that what the company has done in this adherence to generics has affected universities. Now they are picking up the idea of principles of management as proposed by the company while the company is now beginning to back off.

In this company, you have a slippery pig. To do what you are trying to do and completely analyze what has happened is a most difficult thing. True, there has been great change in the company--change in philosophy and change in operations. Resulting there has been a great change in perception and behavior of people. Yet, we are on the brink of even more change. Perhaps it would be of greater value to you if you could delay this study for a year or so to see what the new regime will do. After all you are looking at what one chief executive did in the ten years from 1950 to 1960. On the other hand, within a year or so there will be a new chief executive in this company and what is going to happen in the company then will be most interesting.

Although the rigid "dogma" of the generic principles of management have been relaxed somewhat nonetheless, the operating general managers of the product departments still have great emphasis placed on profitability, efficiency, and productivity. This, of course, is essential for the healthy economic well-being of the company--from which all else must spring. Even what appears to be a growing awareness of the need to again consider "human values" is

effeciency-oriented. For example, one program being developed in the company, about which we were able to secure very little information, involves a series of seminar discussions with operating management regarding "business effectiveness" gained through better understanding of the psychological and social-psychological aspects of group life. We did see some of the models being used in these seminars, and they appear very much as though they came from contemporary group dynamic's thinking. Some of them looked remarkable like Herbert Simon's work in his book, Organizations. Even with our scant knowledge of this program, we predict that it will be an input for further ideological change, and will result in emerging social change within the company.

Much of the dilemma faced by the product department general managers, discussed in preceding chapters, stemmed from the fact that these managers were being held accountable for results, but failed to have complete control of all the inputs into their businesses. We also pointed out the comments of a high executive of Apparatus Sales indicating that he felt that the product departments held too rigidly to certain objectives that were set for them, without the ability to adjust these objectives over time. Following this line of thought, we questioned an operations research consultant in the company who commented as follows:²

²Cited in part previously. This is the entire citation.

I am primarily concerned with developing a better understanding for management in objective setting--the process of planning and measurements. Now, of course, the company's general managers have been admonished through the executive training programs that the job on the professional manager is to "plan, organize, integrate and measure." All this, of course, has to be done in the framework of clear, stated objectives. Now, actually, we do not really know much yet about objective setting. Perhaps I should say that the main problem is how to balance objectives. Obviously, at any one time, there are a number of objectives which a management must have. Some of these are clearly measurable--such as profit, sales volume, and so forth. But, many of the other objectives, although definitely spelled out as being objective by top management are not capable of measurement. For example, in all the company literature on effective professional management, you will find that listed among the objectives of all professional managers are such things as "fulfillment of responsibility to the community," "the obligation to labor," "the development of management personnel," etc. These things can't be measured. Or at least we haven't yet found a sufficient way of measuring them. Therefore there has been a tendency in the company simply to give a sort of lip service to these objectives. And, as a result, the planning to achieve them is somewhat elusive. I think it boils down to the fact that in spite of the lofty words, the general manager is in a position where he simply must product on the measurable objectives, and therefore he devotes his attention and effort to these areas. And, because of the organization structure itself and because of the high or relatively high ability to measure these certain objectives, the "human value systems" possibly have suffered.

Before decentralization and before all the great stress on the measurement of results, there were, of course, these same basic objectives of the business. However, because the accountability of management then was not so clearly fixed to the specific dollars in the business I suspect that such objectives as involved in the relationship of individuals carried equal weight in the minds of management. They probably would too, today, if they were measurable. The process of planning, about which we hear so much, is another elusive thing. There simply is not enough known today about this process and this is one of the

major things we are trying to do--to determine just exactly what this process is or should be

Now, for measurements. Here again, great stress has been placed on quantitative measurements. Now, the trick here is that there are several sets of measurements at any one time. Even such a pro-said thing as market position might be measured in one context by one manager but in another by his superior. Thus, there can be a measurement criterion for some specific variable which has been established. This is the "regular" criterion for Measurement. And, executives in the company will talk in terms of this regular criterion yet they will ask for others. Thus, there is still some differing views as to the means of specific measurements and there are differing emphasis placed upon them.

Now, we talk a great deal in the company these days about human values. This is one of the unmeasureable things as of now. I regard it this way. The individual is part of a system. The individual wants to product and create, but the system as it exists does not provide him the outlet to create. Jobs are structured. There should be the opportunity for the individual to exert more energy which he inherently probably wants to do, to product and create more and to give himself time to produce even more. But, the structuring and programming of jobs--and here I am talking about management jobs too--does not permit him to do this. Hence, he substitutes some outside activity and since he does this and operates in his job within some confines, as a result he begins to think only in terms of wanting more money. This in turn tends to restructure jobs in such a way that they provide more money, but this is all a vicious circle.

Now, what of the power relations between the apparatus type product departments and the newly formed fragmented field sales operations? After the reorganization of Apparatus Sales in 1960, we have noted about that the smaller selling operations are now much more aligned to the product departments they serve, and are organizationally structured

into the same operating groups of the company. Can it be that the conflict between these inter-dependent and interacting systems--the sales operation on the one hand, and the product operation on the other--have resolved their areas of conflict and can now work together in harmony?

Management people in the selling operations think so, both at sales operation headquarters and in the field there is evidence that management personnel and the selling operation think that the aggressive pressures of the product departments have abated and that in fact the selling operation is once again beginning to "come into its own."

Here is what one district sales manager stated about this question:

I think there is a trend toward going back to the way we were. I think the degree of specialization went too far and we will probably be regrouping and recentralizing and coming back a little closer to the old method. It is true that in the electric utility business we still are split at the district manager level, but I think it is only a matter of time and we will all be under one managerial operation again. I think we run cycles on this sort of thing and we are beginning to circle back on ourselves. And, I do definitely think that this is a trend and that the product departments do not have the same degree of insistence on this specialization that they had a couple of years ago.

Another district manager in the industrial sales operation commented:

I think this business of product department pressure has run its course. I think things have settled down and we now have a going business in that we each have found our proper places.

A high level staff executive in one of the sales operations headquarters organization commented as follows in this regard:

The relations now between the product departments and the field selling operations are very very good. We are really achieving things together. The product departments have been very happy with our sales group in the field; we are making considerable progress in tackling and solving some tough customer problems; we are improving our market position in many areas. The relations of our headquarters sales group with product departments is excellent; there is very good rapport. All this has worked out very well.

Oh yes, there are some problems but I think things are looking better.

This staff executive was asked his feeling about our observation in the field that some sales managers felt there might be a regrouping and a swing back to previous methods. He commented:

No, I don't think so. I think we have a tremendous sales organization now and on our end of the business. I think the product departments recognized this as in a sense "their" sales organization and I don't think there will be any recentralization. We at headquarters have always had the philosophy of cooperation and coordination with the product departments. This has always been true, and I think that our relations with the product departments are excellent and will remain so.

Another staff executive in the other sales operation had these comments to make on the same general subject:

All this talk about product specialization in the field did not come from the product departments; we always felt at headquarters that there should be the degree of specialization that was required. After all, we were specializing in Apparatus Sales before the product departments ever came into being. This idea that specialization is new is a wrong idea.

We in Apparatus Sales were pioneers in specializing our efforts. Regarding any possibility of future conflict between the product departments and our present organization, I don't think there will be any. Of course, there are always problems and we always have to do a better job of developing the ability of our sales people to create strategies. And, I suppose there will be some changes in the future. But, we are calling the shots now, we are running the sales business, and as long as we continue to improve and do a good job, I do not see that we will have any difficulties with the product departments whatsoever.

A high level operating executive in one of the sales operations, at headquarters, had these observations in this regard:

Yes, the areas of conflict which did exist between some of the product people and the Apparatus Sales people have been pretty well eliminated. Our new organization is working very well. Of course, a good many of the top management who lived through the really tough days of decentralization and reorganization are now gone. But, I think our relationships with the product departments and division management are very good now. I believe for example that in the job I have the product departments recognize the great strength of Apparatus Sales or I should say our sales operation--as it now exists, and that we are in fact a good team operation. I think that we here at headquarters are taking the initiative in carrying the ball to an extent which the old Apparatus Sales Division never did. And, this is definitely being accepted by the product departments.

Thus, there is some evidence that the sales people, in the field and at headquarters, believe that a new, workable relationship exists with the product operations. But what do the product department management people think of this? We must bear in mind that the foregoing comments, and those following, were all made in 1962.

Speaking of relationships of the product departments with the "new" selling organization, one product department marketing manager stated:

No, I don't think that the areas of conflict have been resolved or removed. I think that at the moment the situation might look pretty good on the surface. But, You must bear in mind that because of the anti-trust situation many of the old product department general managers were relieved of their jobs and a whole new batch has come in. These new managers are not acquainted with the business--or they are just becoming to be-- and I think they are in a period of learning their new jobs before, they again begin to stretch out for more authority over field selling. But, I think this will come. I do not think that the situation is eliminated at all. Let me put it this way. As long as you give a man complete responsibility for a job to be done but do not also give him the complete authority and power to do it, he will do his utmost to get this authority.

Still another marketing manager of a product department commented:

Yes, things are a lot better than they used to be. You know how I felt about things in the past. It simply doesn't stack up for one sales engineer calling on a utility to handle everything from turbines to meters. I think that the sales engineer and their management were caught by the glamour of the big stuff and the smaller products suffered because of this. But your apparent assumption that marketing managers and general managers of product departments now feel that the conflicts between the selling organization and the product departments are resolved are wrong in my opinion. I said that things are working out pretty well and a lot better than they used to be. But, we still basically have the same problem--there are salesmen handling our products over whom we have no control. I think our control is closer than it used to be, but it is by no means complete.

Regarding the headquarters operations of the new selling organization, I think the sales headquarter's staff operation is a "fifth wheel." Our dealings should be entirely with the field selling organization. They are now pretty highly specialized to our

products and although it isn't the ideal situation it is certainly quite workable. But, for their headquarters to be constantly getting into the act and wanting to insert themselves into the direct line of communication between the sales people and the field and us, is of no value to us. I do not see that they provide us any valuable function and as far as I am concerned they are simply overhead expense.

A vice president and division manager was asked to comment on the present selling organization which was highly specialized to the products of his division. He was particularly asked if the previous conflicts between the two organizations have been resolved. He commented as follows:

The conflict, or at least potential conflict, can never be eliminated as long as the general manager of a business does not have the control over every facet of his business. I will admit that the present organization is better from our viewpoint and that we do have a higher degree of control. However, there is still a problem in the organization which I think is serious. Whereas, the field selling organization is much more highly specialized--that is, we now actually have sales engineer who do nothing but sell turbines and meter sales engineer who sell nothing but meters, the fact still remains that the sales operation still has a headquarters operation which as far as I am concerned is superfluous. I think that I could deal directly with the field selling organization and its specialized management and salesmen but I find too often that communication has to be channeled through the headquarters operation, and I think this is not necessary. This headquarters operation will smack of the old "empire." They are still trying to run things. As a matter of fact their top management is still telling the field sales management too much what to do; it is not a decentralized operation. It is a highly centralized operation. There is too much worrying about how many stenographers there are in the field selling organization, etc. I will never be content until we can deal directly with the field people.

In discussing this with the marketing manager of still another product department, we proposed that with the old Apparatus Sales Division reorganized and split into specialized components, apparently the problems of the past may have been eliminated. This marketing manager replied:

Don't kid yourself. This may be a lull before another storm. As long as the general manager is given complete authority and responsibility and accountability for a certain job to do but he finds he doesn't have the direct power over a certain element of his operations, there is always going to be a problem. I would predict that as long as the field selling of products is vested in any kind of an organization however specialized, however organized, but outside the administrative control of the product department itself, the product department management will continue to take pot shots at it. I don't think the problem is solved at all.

So, here are two views of the present situation. Having gone through a rather scathing experience the Apparatus Sales people now in many instances feel that the "worst is over" and that there will be a period of stability and possibility of even swinging back to some of the older traditional ways of doing things. On the other hand, the routes of the conflict apparently are still existent, as perceived by Product Department management people. We predict that in time there will again be pressures from the product departments for even closer control over field sales operations. These pressures may be more subtle than they were in the middle 1950's but they will be evident nonetheless.

Finally, in concluding we submit that the entire Company presently has an obsession with its own image. Of course, the misfortune of the anti-trust situation in 1960 has much to do with this. This great company with its splendid public image and its strong internal image suffered greatly. In our discussions with top level management people and particularly with staff executive people at executive headquarters, we definitely detected a great deal of sensitivity. The company appears to be extremely self-conscious at the moment and extremely concerned about itself. This coupled with the imminent change of the chief executive augurs changing managerial and executive philosophy and ideology.

CHAPTER XVI

CONCLUSIONS

Broad Summary

This study has described the process of change over time in the General Electric Company along several structural dimensions. It also described changes in executive philosophy, in perceptions of and attitudes to managerial positions, in the web of symbols surrounding the managerial life, and in certain managerial behavior patterns.

Born of market-oriented technology, continually creating new technology, and feeding on the very technology it created, the company grew in every respect--in sales, in number of employees, in physical size, in geographical space, in diverse product lines, and in diverse markets served (Appendix I, Charts 2 and 3). Significantly, it generated its new technologies and strategic programs within a relatively unchanging formal organization structure for nearly sixty years. This structure was line and staff, with the "line" components being those of the work functions of engineering, manufacturing, and sales. Integration of these work functions existed only at top executive level, i. e., the organization structure was highly centralized (Appendix I, Chart 1).

As the company grew in all dimensions, as technology, products, and markets proliferated, these vertical functions grew, becoming great parochial hierarchies. New technologies and products were in a very real sense "tacked on" the existing formal organization structure. There were exceptions; the lamp business and the appliance business were separately departmentalized. But even within these departments, the proliferating technology, products, and markets were "tacked on" a centralized organization structure, and the hierarchial families of engineering, manufacturing, and sales grew in complexity--and were integrated only at the departmental executive level.

By the late 1920's, many executives in the Company were expressing fear that the centralized organization structure had become unwieldy and inefficient, and that further growth in technology, output, and size could no longer be accommodated by such structure.

The great Depression and World War II delayed executive action for organization structure change. After World War II, facing predictions of mushrooming technology and greatly increasing market opportunities, the Company embarked upon a program of decentralization, a restructuring of the formal organization structure into a large number of quasi-autonomous product businesses--expressly to more fully exploit the market opportunities.

In this process, elements of social structure other than merely the one of formal organization structure also underwent changes, some by intent, and some not. The decentralization process was overtly pronounced by top executives as more than organization-structure change; it was a "new" executive philosophy, a "new" managerial attitude. New perceptions of and attitudes to the Company, the work functions, and the managerial position evolved. A new status system was created; a new managerial elite emerged. Concomitantly, the expectation system became more rational, more subject to quantitative measurement, more job-centered and less man-centered. Administrative practices long in existence and long providing meanings to managerial life were eliminated or changed. Traditions and rituals centered about and having grown from the training programs, the salary administration, the appraisal system, the mobility pattern were eroded or disappeared completely. In short, a "new" social system emerged, with new form, new functions, new potential for change, and new meanings to individuals.

However, the decentralization process had little initial effect on one large and important element of the Company, the Apparatus Sales Division. Organization structure remained essentially unchanged in this component. The time-honored traditions of this component reinforced the beliefs of its management that the Division would continue to operate as it had in the past.

But new training programs (at all levels), the broadly publicized concepts of the "professional manager," the communality of organization structure, the near-communality of other social structure variables, the increase of rational definition of roles and statuses--all this began to infiltrate Apparatus Sales also, with this division nevertheless tenaciously holding on to its past.

Conflict arose between Apparatus Sales and the newly formed product operations primarily because the product operations were held rationally accountable for certain quantitatively measurable objectives without having control over their field sales. The product departments (or many of them) engaged in aggressive tactics designed to establish some degree of power over Apparatus Sales and to force a fragmenting of this large and strong organization into small pieces more nearly allied to product department groupings. This, the product departments succeeded in doing. The centering of power in the hands of the relatively few executive managers of the company was enhanced.

All this was accomplished in spite of considerable resistance by Apparatus Sales management against change and by widespread personal anxiety and frustration over a period of three to five years. We conjecture (and the tenor of many of the reported interviews appears to validate) that the Apparatus Sales management suffered during this period a net loss of managerial efficiency and

productivity. Evidence also was presented indicating that the desire for additional power still exists in the product department power centers.

Reference to the Problem and Hypotheses

Our original statement of the problem proposed that to remain viable, the enterprise must create or adopt new market-oriented technologies and strategic programs. The basic hypothesis in Chapter I proposed that this may be accomplished by the existing organization structure only up to some optimum point, after which formal organization structure must change to accommodate continued assimilation of new technology and programming. (That this point was reached by General Electric, and that it was known by management to have been reached, is abundantly clear). It was further proposed that when formal organization structure was changed, other elements of the social structure change, and this in turn changes (or causes disequilibrium) in other components of the totality of the social system. The problem thus is concerned also with the relative ease or difficulty which individuals and groups experience in adapting to the changing social system; and with the relative ease or difficulty of developing new orientations to managerial behavior.

Every aspect of this problem (or problems) is discernible in the empirical research presented in Chapters

II to XV. We believe that the research evidence tends to validate the propositions presented on pages 8-12.

Concluding Generalizations

What abstractions can we draw from this study enabling us to better understand such organization-behavior problems, better predict their emergence, and better control them in the interest of optimum organization productivity and efficiency?

In Chapter I we presented conceptual frameworks ranging from the broad or general to the more specific. Here we reverse; first we shall refer back to the more specific organization theories, and then finally shall refer to the broader and more general conceptual framework of social anthropology. From this we shall draw generalizations.

Organization theory: classical.--A disciple of "Scientific Management School," examining General Electric's management and organization concepts and practices post-decentralization could understandably feel that the tenets of his "school" were justified, if not actually validated. From the view point of the job of the "professional manager," General Electric did espouse the "principles" of management, i.e., planning, organizing, integrating, and evaluating. Furthermore, these "principles" were (at first) posed as essentially the only principles underlying the manager's

job, to the extent that the Company executives were accused of establishing dogma. True, there has been some backing away from their all-holy acceptance, but they are still posed as an important underpinning of the managerial job.

Other "principles" of scientific management are operative, even now. Such organizational structural principles as span of control, etc. are employed. Further, and perhaps more significantly, the very idea of defining job, its functions and its objectives, and matching an individual to those specifications is conceptually a scientific management approach. Added to this is the increasing rationality of such matching, the increasing programming of job activities, and increasing quantitative measurement of performance.

The general propositions of classical or "scientific management" organization theory can be observed in operation during and after the decentralization period. They are valuable in understanding the job content or the managerial activities of the manager, and valuable, in a static sense, of understanding the anatomy of organization structure. But we cannot find them of any value in understanding (much less predicting) what happened dynamically in the process of change in the total social structure of the social system. They cannot explain resistance to change, changing equilibria between the traditional and the technological present and

future. Nor can they explain anxiety, conflict, relative ease or difficulty of adaptation, the triggering of continued change.

Neo-classical theory.--The propositions of the neo-classical, or human-relations "school" can also be found to be operating. They can be valuable in analyzing the history of change in General Electric in regard to changing perceptions, attitudes, identifications, and (to some extent) behavior patterns. But again, the neo-classical propositions do not provide complete understanding of the process of change; they deal inadequately or improperly take as given the formal structure as established by and subject to change by the executive; they do not explain the growth of programmed activity.

"Modern" organization theory.--The propositions of contemporary "systems" theory can also be seen in application in this case study. With its analytical approach, its concern with the interrelatedness of strategic parts of the system, and means of linking these parts, systems theory probably has more explanatory potential than does classical or neo-classical theory. Certainly General Electric itself is employing the systems concept in its operations research techniques.

But what is "systems" organization theory really? What specific conceptual framework does it have, which



could permit the drawing of useful abstractions from the General Electric history? We suggest that "systems" organization theory is a potpourri of individual theories--not yet welded into a conceptual framework capable of permitting complete explanation, and prediction. True, individual elements of "systems" organization theory (such as "communication," or "decision-making") may enable empirical research for itself. But the total system which is the business enterprise is more than merely the sum of components, by definition of "system," and we posit that there is no total system conceptual frame in modern organization theory which is operational and which will permit empirical research on the total system. Further, much of organization systems theory is clouded by complexity and by fixation on technical aspects of the total business system, e.g., decision making, or communication. It lacks a simple but rigorous, all inclusive, operational and universally applicable framework.¹

Concepts of social anthropology.--On the other hand, social system theory² does provide such a framework, if

¹See March and Simon, op. cit., pp. 4-7, in which these authors express a similar concern.

²Of course, the "social-system" analysis of rationally ordered organizations is not new in sociology. Robert Merton (in Social Theory and Social Structure), Gensberg and Reilly (in Effecting Change in Large Organizations), E. Wight Baabke (in Organization and the Individual) provide examples. What we are proposing, however, is that the conceptual and analytical framework advanced by Radcliffe-Brown as the basis

applied in the manner proposed by Radcliffe-Brown, as detailed in Chapter I. Further if the framework is extended to include Warner's theories of the process of social change both synchronic and diachronic investigations can be accomplished. This is the conceptual framework we have used to understand how and why events occurred as they did in the General Electric Company and to draw generalizations tending to validate our hypotheses.

Certainly at this stage, our application of this social system construct is crude, and even if refined may well result in only some "box-car" predictions of organization behavior. But even this is a far cry from lack of insight into the inevitable reverberations throughout all elements of a social system, when structure is changed.³ Even rough predictions of conflict, and of its depth,

of a "natural Science of Society" has unique application to the understanding of the complex corporation as a social system. Adding Warner's theories of the process of change and the "emerging of a greater society," and his theories of the nature of symbols to this, we are suggesting not only better analysis and understanding but also better predictive ability as change is inputted into the Corporate social system. Hence we are not equating the conceptional framework used here with "traditional" social system analysis.

³Consider the statement of General Electric's chief executive during the decentralization period when he spoke of "some foolish people" who appear to be "upset by the organization change." Such a statement exhibits vast misunderstanding of the social system into which he was introducing change.

breadth, and duration, and its parochial locations may permit the executive to prepare some preventive or ameliorating measures. Or at a minimum, it will eliminate surprise, providing an understanding rather than an irritation which could cause punitive measures.

We propose application of social-system theory entirely on a rational basis, with the objective of providing an additional management tool for enhancing the organization's adjustment to changing environments, with optimum efficiency and productivity.

The Research Future

"Research is unfinished business."⁴ This study is admittedly heuristic, and represents only a first thrust by this writer in his groping to understand and predict organization behavior, a groping which began during his several years as a manager in General Electric, and which persists even after doctoral studies.

A science seeks to establish universal laws, via its theories, which strive to explain, predict and influence. Current theories of business organization behavior are inching forward to this end, but are not yet adequate. For example, under certain conditions an

⁴W. Lloyd Warner, in a discussion with this writer.

organization may have to adjust to its changing environment drastically and rapidly; or for another example, in times of severe crisis (e. G., General Electric's conviction of violation of anti-trust laws), the executive may have to shift emphasis, direction, philosophy, or even structure. But now know just how to shift, and now know the total effect of the shift in the totality of the corporate system? We contend that current organization theories are not very clear on this. In the case of General Electric, we can find evidence tending to validate all the "schools" of organization theory, if we sift out the appropriate evidence. Yet none of them individually nor all of them, collectively can explain all that did happen in General Electric, or what is happening now, or predict the course of the future.

We suggest that current organization theories are really a set of sub-theories, which can be subsumed under a broader, more encompassing theoretical framework--a conceptual framework which is not directed merely at organization behavior, but which is seeking universal laws of man's behavior in his world, whatever his world may be.

We contend that this study in a very modest and small way lends credence to Radcliffe-Brown's proposed, "natural science of society" and to Warner's theories of the process of change and of "the emerging greater society." One case study cannot validate anything. But this writer

will continue research based on this theoretical framework with the aim of better understanding and predicting what really happens in the great complex corporation--the efficiency and productivity of which is so vital to the welfare of our emerging Great Society.

BIBLIOGRAPHY

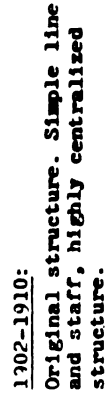
BIBLIOGRAPHY

- Alderson, W. Marketing Behavior and Executive Action. Homewood: Richard D. Irwin, 1957.
- Argyris, C. Personality and Organization. New York: John Wiley, 1958.
- Backman, J. The Economics of the Electrical Machinery Industry. New York: New York University Press, 1962.
- Chamberlin, E. The Theory of Monopolistic Competition. Cambridge: The Harvard University Press, 1947.
- Cordiner, R. J. New Frontiers for Professional Management. New York: McGraw-Hill, 1956.
- Davis, K. Human Relations at Work. New York: McGraw-Hill, 1964.
- Durkheim, E. The Elementary Forms of Religious Life. New York: Collier Books, 1961.
- _____. The Rules of Sociological Method. Chicago: University of Chicago Press, 1938.
- Gardner, B. B., and Moore, D. G. Human Relations in Industry. Homewood: Richard D. Irwin, 1955.
- General Electric Company. The General Electric Review. Schenectady.
- Hammond, J. Men and Volts. New York: A. B. Lippincott, 1941.
- Homans, G. C. The Human Group. New York: Harcourt Brace, 1950.
- Loth, D. Swope of G. E. New York: Simon and Schuster, 1958.
- Malinowski, B. Argonauts of the Western Pacific. New York: E. P. Dutton, 1950.

- _____. Crime and Custom in a Savage Society. New York: The Humanities Press, 1941.
- March, J. G., and Simon, H. A. Organizations. New York: John Wiley, 1958.
- McFarland, D. E. Management Principles and Practices. New York: McMillan Co., 1964.
- Passer, H. G. The Electrical Manufacturers, 1875-1900. Cambridge: The Harvard University Press, 1953.
- Radcliffe-Brown, A. R. A Natural Science of Society. Glencoe: The Free Press, 1957.
- Scott, W. G. "Organization Theory: An Overview and Appraisal," Journal of the Academy of Management, Vol. 4 (April, 1961).
- Simon, H. A. "On the Concept of Organizational Goal," Administrative Science Quarterly, Vol. 9, No. 1 (June, 1964), pp. 2-22.
- Vennard, E. The Electric Power Business. New York: McGraw-Hill, 1962.
- Warner, W. L. The Corporation in the Emergent Society. New York: Harper and Brothers, 1962.
- _____. The Living and the Dead. New Haven: Yale University Press, 1959.

APPENDICES

APPENDIX I



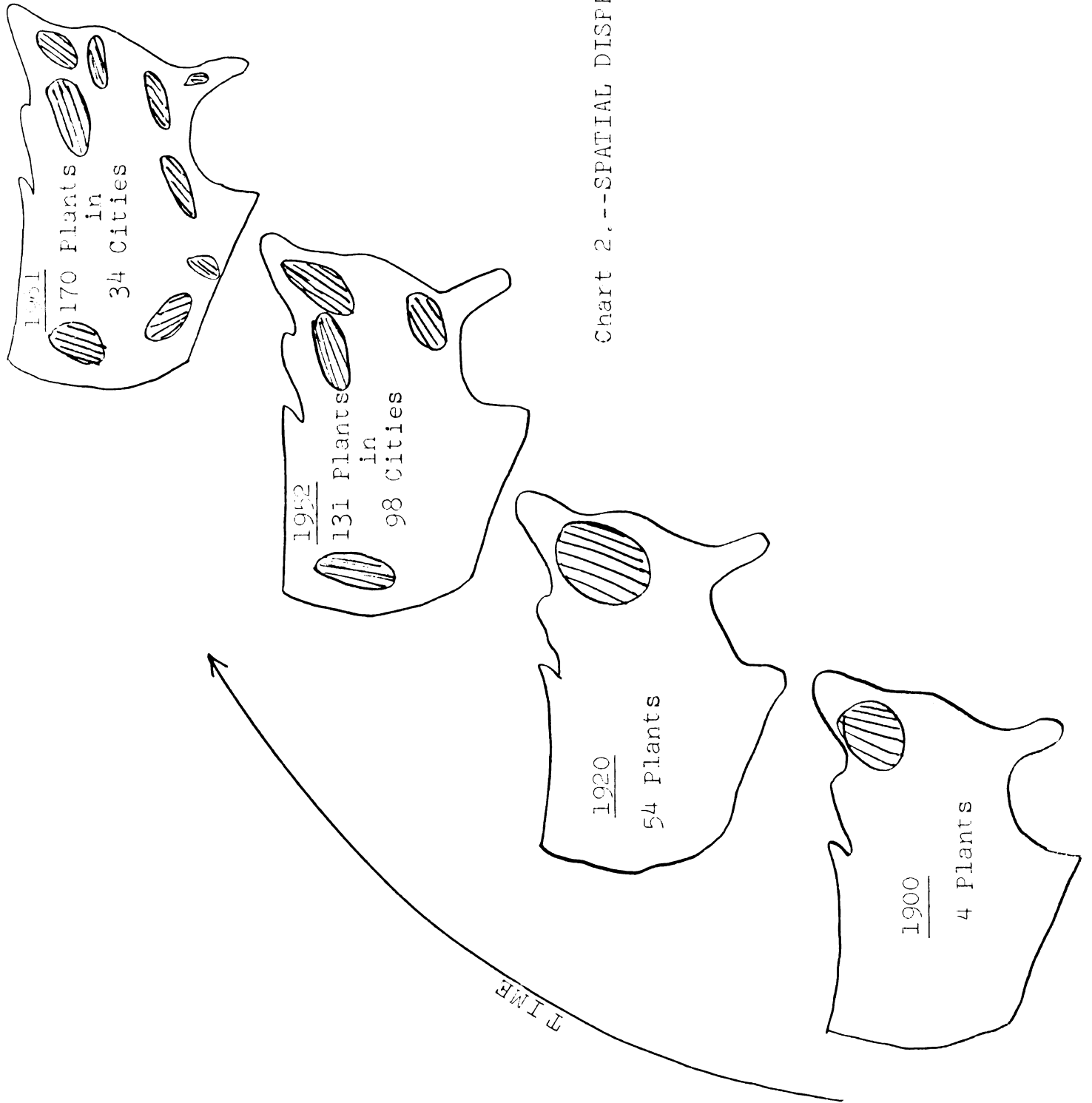


Chart 2.--SPATIAL DISPERSION

CHART 3. ---GROWTH IN SALES, MANPOWER, PRODUCT LINES, ETC.

	Sales in Millions of Dollars	% Increase in Sales from Previ- ous Period	Number of Employees	Number of Stock Owners	Number of Plants	Number of Product Lines	Number of Departments	Number of Affiliated Companies
1960	4,198	114%	251,000	417,000	168	400 (Est.)	110	3
1950	1,960	330%	183,000	250,000	117	328	37	14
1940	456	21%	85,000	212,000	54	281	--	11
1930	376	37%	78,000	84,000	33	193	--	12
1920	276	288%	82,000	17,000	54	85	--	5
1910	71	---	36,200	9,000	13	30	--	1
1892	11	---	10,000	3,000	3	5	--	1

APPENDIX II

Wall Street Journal
March 22, 1961

GE Controversy

Company's Officials Debate Merit of Its Decentralized System

**Critics Say 113 Units Build
Excessive Staffs, Often
Fail to Work Together**

Backers Say Efficiency Rises

BY STANLEY PENN AND ED CONY
Staff Reporters of The Wall Street Journal

NEW YORK—In the midst of General Electric's highly-publicized antitrust troubles and its earnings slump, some G.E. executives are worrying more about another matter: Is G.E. too decentralized?

The giant electrical products manufacturer in the past decade has split up its operations into 113 departments, each with a large degree of autonomy. Critics both inside and outside the company claim this has led to lack of cooperation among departments, frustration of top management's will, and an overriding concern by some G.E. department managers for the good of their own units at the expense of the general welfare of the company. Some G.E. men argue that the company's high degree of decentralization made it easier for middle-level officials to engage in price-fixing conspiracies without the knowledge of top management.

G.E., however, claims it is still firmly committed to decentralization; top officials argue it's the only possible course for a company so big and diversified. G.E.'s sales, they note, have continued to rise under decentralization. Though profit margins aren't as large as they were in the years just before decentralization, they compared favorably with those of major competitors in a period when corporate profit margins generally are under pressure.

Problems of "Gigantism"

Perhaps a fair analysis would be that the most carefully worked out systems that management planners can devise turn out to have serious flaws when applied to a big organization, be it business or governmental. "Gigantism" seems to create certain problems which defy those who believe management can be reduced to anything like a science.

G.E.'s experience may interest other companies currently trying to increase their efficiency as a ~~recession~~ ~~antidote~~.

to become its ~~main~~ competitors. It decided it had to let men close to the market make as many day-to-day business decisions as possible. In the words of a company manual, each G.E. department is tailored as a business "a single manager can get his arms around." The average department rings up sales of \$40 million a year.

The department general manager has great responsibilities. He may hire and fire, set prices, decide on products he wants to push and shape his inventory as he wishes. His total compensation may run from \$50,000 to \$80,000 a year.

In return, he must account for his stewardship. He's judged largely on his profits. High profits bring rewards, substantial bonuses which he shares with his subordinates. Failure brings punishment; firing is a frequent penalty.

A step above the department manager in G.E.'s management hierarchy is the division manager. He guides a "family of related departments" or, in the words of one vice president at G.E., "he acts as a buffer between the departments and the executive office in New York." For example, under the wing of the Lamp Division's general manager are six departments: Large Lamps, Lamp Glass, Lamp Metals and Components, Lamp Development Operation, Miniature Lamps and Photo Lamps. In all, there are 21 divisions.

Top management in New York retains ultimate power, of course. But the theory is that at this lofty level, executives are freed from many details of day to day operations and can concentrate on broad company policy and on long range planning.

The chief architect of this plan has been Ralph Cordiner, dynamic board chairman of G.E. During World War II G.E.'s sales quadrupled, reaching \$1.5 billion in 1945. As G.E. continued to grow after the war Mr. Cordiner and others became convinced the company was too big to run in a highly centralized fashion by executives working in "the G.E. tower" at 570 Lexington Ave. in New York City.

G.E.'s Empire

The G.E. empire is indeed a mighty one to manage. In the United States 167 plants bear the G.E. symbol; they are scattered through 29 states and 133 cities. Overseas, the sun never sets on G.E.'s foreign operations in 21 countries.

An industrial army of more than 250,000 draws paychecks from the corporation—to the tune of more than \$1.8 billion a year. Sales of \$4.2 billion last year placed G.E. fourth in the land among industrial concerns. It outsold such giants as Socony Mobil Oil Co., U.S. Steel Corp. and Chrysler Corp.

The firm's great diversity compounds its management problems. The company will sell you a 25-cent light bulb, a \$15 million generator, an electric can opener, a synthetic diamond or a jet aircraft engine.

Mr. Cordiner has speculated publicly that G.E. may be the most diversified company in the world. In all, it turns out about 200,000 different products. The company confesses it can't give the precise number (is a pink fluorescent lamp a separate product from a yellow one?).

So complex was G.E.'s decentralization that it took about five years, 1951-55, to push through the bulk of it. Officially, no one at G.E. now will utter a harsh word against the program. "We consider decentralization a great source of strength, which builds high-quality management," Mr. Cordiner declared.



Says Harold Smiddy, a G.E. vice president who played a major role in decentralizing the company: "We believe the (decentralization) policy is sound and the approach workable." Mr. Smiddy heads G.E.'s Management Consultation Services, a unit which does "basic and applied research" in professional management and passes along the results of such research to G.E. managers. Mr. Smiddy's unit, among

other things, tries to get department managers to do a better job, both for their departments and for the company as a whole.

"Profitable Innovations"

As a result of decentralization, Mr. Smiddy says, G.E. today has "in all components more people with better understanding" of how to manage their business. "While many (G.E. managers) have made mistakes along the way, which more centralized controls might have prevented, they also have made countless and profitable innovations which central executives never would have conceived."

It is known, however, that Mr. Cordiner himself is privately something less than fully satisfied with decentralization. And he is inviting and listening to criticism of the system.

Several G.E. executives share the view that decentralization was partly responsible for the company's recent antitrust difficulties. Says one G.E. man: "When you decentralize, each department general manager is measured by the profits on his product. Before decentralization, when all types of turbine generators, for instance, were under one man, he could decide to let sales of 10,000-kilowatt units go and concentrate on sales of 100,000-kilowatt units. But when you are decentralized, one man is being measured on sales of 10,000-kilowatt units and a different man is measured on sales of the bigger units. So you lose some flexibility. This increases the pressure to fix prices in order to maintain your profit."

In the recent antitrust action, G.E. contended Mr. Cordiner and other members of top management knew nothing of the abuses. Government attorneys acknowledged they were not claiming that the G.E. board, the chairman or the president had any knowledge of the price-fixing conspiracies.

G.E.'s Official Position

Officially, the company contends decentralization had nothing to do with its antitrust troubles. Mr. Cordiner recently said that nearly all of the 28 other companies indicted in the antitrust action were highly centralized. He added that decentralization is relatively new to the business world, while antitrust violations are not.

When any company decentralizes, it hands responsibility to at least a few men who are unable to carry it. According to backers of decentralization, this makes it easier to weed out inefficient executives.

G.E. officials say decentralization has helped them weed out a lot of executive dead wood. "We've exposed a lot of boobs who should have been fired years ago," says one high G.E. executive. Mr. Cordiner recently told a meeting of the New York Society of Security Analysts G.E. now is "lean, hard and hungry."

Undoubtedly the company had grown fat in pre-Cordiner days. "Generous Electric" was a term used by many cynics who knew that few veteran employees were fired from management positions. Security did have one advantage for the company: It bred a fierce loyalty. It was said of many a G.E. man: "He's got the G.E. symbol tattooed on his hip."

But critics of G.E.'s decentralization say some of the old loyalty is wearing off and morale is declining. "My old friends at G.E. complain the ax swings suddenly these days and sometimes for trivial reasons," says one management man no longer with the company.

"When things go sour in a department, the manager will fire some people just to show top management he is doing something," says another former G.E. man. "In one department I was in, we had three different marketing managers in one year."

"A Time of Change"

A current G.E. executive says: "We're in a time of change in G.E. and people are in the grip of an anxiety neurosis." Executive recruiting firms report a sharply increased number of G.E. executives are trying to find jobs elsewhere. Contributing to the current ferment, say some G.E. men, are company payroll-cutting in response to the recession and the blow to employee morale stemming from the antitrust action.

The company's position is that its executive turnover is not abnormal. A G.E. official says if there are "several hundred fellows on the loose," that's a small percentage of the 35,000 G.E. professional managers, and is a "lower turnover" rate than at most companies. He claims G.E. has "no particular morale problem."

Some critics of G.E.'s decentralization trace its defects to "excessive fragmentation." One man contends 113 departments are too many. "We mistook bits of businesses for entire businesses," he says. Also there are some within the inner councils of the company who advocate a retreat from the concept of departmental profit responsibility. These officials urge that profit responsibility be concentrated at the division level.

Three Turbine Departments

As an instance of "fragmentation" a G.E. management man cites the creation of three separate G.E. turbine departments—small, medium and large. "A utility gets to know our small turbine people. But the utility gets bigger and perhaps needs a medium-size turbine. It must then get acquainted all over again with new G.E. people and our carefully built-up customer contacts are wasted."

One manager who left G.E. recently after 20 years' experience in dealing with utilities puts the problem this way. "Utility executives like attention from the top echelon of G.E. And they got used to getting it over the years. They knew Charlie Wilson and knew him pretty well. Now, under decentralization, they have to get acquainted with a lot of different department marketing people. Let's say we have between 10 and 20 departments doing business with utilities. Each department marketing man wants to get acquainted with the customer himself. So he goes in and beats on the utility executive's desk in behalf of his product."

This man claims the company has lost sight of the customer's interest in some respects as it has set up the decentralization system. Certainly it is true that top G.E. officials spend great amounts of time and effort in teaching the art of management and specifically to get across the decentralization philosophy. Some critics claim decentralization has been preached as dogma.

Theory and Practice

"The theory is that all those staff people in New York will look at the over-all problems, think about the future and try to be helpful to the operating departments," says one former G.E. executive. In practice, he claims, the New York office floods the operating departments with more material, on management and other topics, than departmental officials can find time to read. "The more people you get," he says, "the more reading the operating man gets and the more difficult it is to understand."

As a sample of the material departmental executives must peruse, consider this para-

graph from a paper recently distributed by the New York office: "In a centralized organization the decision structure tends to be one where the decisions at the top are non-routine and value sensitive; at the bottom, routine and value insensitive. On the other hand, in a decentralized organization, value sensitive and value insensitive decisions are made throughout the organization at all levels; it is the breadth and complexity of impact which tends to decrease from top to lower echelons in the organization."

A long-time operating manager claims, "When G.E. established a definite pattern for organization in a department and insisted on it being followed, it tended to stereotype the type of individual who ends up running one of these businesses." He claims that when managers are appointed "they usually are the type who'll go along with the system; it's conformity, so to speak." This man maintains that within other companies "some managers are highly unorthodox—yet still very successful."

Many Separate Staffs

One tenet of decentralization is that each department, in order to operate as a business, should have all the tools or services available to an independent company. This has meant in practice that most departments have hired their own people to handle such staff assignments as finance, marketing, engineering, and public relations. G.E.'s directory of "Press Relations Personnel," for instance, rises to 26 pages.

Consider what happened in 1956 when G.E.'s Hotpoint division was decentralized into five product departments—laundry, refrigerators, television, ranges, kitchen appliances. The number of people in "finance" rose from 300 to about 520, according to an executive in the division at the time. A Hotpoint spokesman admits there was some increase but says financial personnel have dwindled again to "about 300" now.

One former department manager says: "When you get one of those lovely organization charts with all the little rectangles in it—for the staff positions—you tend to fill them up with people, whether you really need them or not."

Those who insist that G.E.'s decentralization went too far claim department managers tend to take only a short-range view of their operations. "The manager worries too much about his immediate profits," claims one G.E. man. "His view gets too narrow. He neglects to concentrate on new areas the company ought to be looking into."

Impact on Research

One G.E. scientist claims the short-range outlook of managers is curbing research at the department level, to the detriment of the corporation as a whole. He says that about a year ago a memo on this subject was sent to all research and development sections within departments. The memo said G.E.'s product (the company's slogan is, "Progress is our most important product") was running into troubles under decentralization. The scientist says the memo laid the blame for the problem on department managers' reluctance to endanger their profits by going out on a limb for advanced product research.

The memo proposed a solution: Department managers could ask for specific funds to carry out risky research projects. This scientist laughs at the idea. He claims no department head will put himself in the position of saying a given research project is good, but too risky for him to undertake within his budget. "As far as I know, no department has requested extra funds," he says.

G.E. contends this account is a twisted one. The company said the letter was sent out "largely because some members of the Executive Office wondered if maybe there were some risks that should be underwritten at the corporate level rather than at the decentralized business level."

As the company suggests, research at G.E. is carried on at various levels. At the top, C. Guy Suits, vice president and director of research, heads all G.E. research including the G.E. research laboratory in Schenectady. Indeed, G.E.'s over-all engineering and research have chalked up some remarkable accomplishments in the post-war period. To take only a sampling: Artificial diamonds, a computer system for the banking industry, tiny flash bulbs, the guidance system for the Atlas missile, and a system to desalt sea water.

But the scientists who gripe seem to center their criticism on the attitude toward research at the department level. One cites the Vallecitos Laboratory at Pleasanton, Calif., which is trying to reduce costs of atomic power to make it more competitive with conventional power sources. He says he has heard one high official in the Atomic Power Equipment department, which runs the laboratory, describe it as "an albatross" inasmuch as it costs the department a good deal and has not been bringing in any substantial returns in reactor sales, which have been slim throughout the industry.

Another Research Problem

Narrow departmental focus raises another research problem, says one G.E. scientist. "It has almost halted interplay of ideas among scientists working on products in different departments, he contends. "Not long ago,

someone in another department wanted more than two hours' help from me. I asked him whether he had a 'shop card' which would have allowed his department to transfer funds to my department for the time that I would have worked on his project. As a result of such old tapes, communications between even closely related departments has dropped to nothing."

Mr. Cordiner emphasized, however, that G.E. measures its managers in seven other areas besides "profitability": Market position, productivity, product leadership, personnel development, employee attitudes, public responsibility and balance between short-range and long-range goals. Indeed, he has stressed repeatedly the importance of balanced performance by managers, insisting that they should take into account the interests of the public and the customer.

In a few cases, G.E. has backed away from decentralization. A couple of years ago in the Aircraft Gas Turbine division there were two departments concerned with jet engines—one was an engineering and development department, the other was a production department which turned out the engines the other department designed.

The division manager who was responsible for both departments was out to cut costs. He looked at the two departments and saw that each had its own marketing, finance and engineering staffs. Deciding there was much overlapping and duplication, he consolidated the two departments. Result: He was able to pare his staff of non-production people by more than 800 and shave his costs by \$5 million to \$6 million a year. Remarks an admiring aide: "This also made it easier for the customer who had just one marketing manager and one engineering manager to deal with instead of two."

Another consolidation: Hotpoint and G.E. appliances have been serviced by one facility in Indianapolis for the past year, a departure from customary practice in which both appliance groups have their own service centers. G.E. calls the move strictly an "experiment."

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