

INCREASING WORKER INVOLVEMENT AT THE WORKPLACE:

INCREASING WORKER INVOLVEMENT AT THE WORKPLACE:
A COMPARATIVE CASE STUDY OF WORKPLACE DEMOCRATIZATION SCHEMES

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ABSTRACT

Workers' participation in management as a structural expression of an alternative form of industrial management has been mushrooming in both developed and developing countries. The increasing popularity of workers' participation has been accompanied by a proliferation of studies most of which have focused on either the extent to which it is associated with favourable outcomes or the extent to which prescribed participation is associated with actual participation. While this is relevant, it has meant that research whose objective is to investigate the conditions under which the form and content of participation vary in organizations in countries without a legal prescription for participatory forms has been neglected.

The study reported here is concerned with: (a) exploring, using a structural contingency framework, why organizations in the same country adopt different participatory structures and (b) the dynamics or employee experience of participation. Empirical research was undertaken in a medium-sized and a small-sized company in Hamilton, Ontario. Data were collected with the aid of questionnaire, open-ended interviews, documentary material and on-site observation, including attendance at meetings.

The analysis shows that choice of participatory structure is influenced by the interaction of a specified set of variables. Foremost amongst them is the nature of the product and technology. These

variables, however, only provide structural opportunities and limitations and the eventual choice is shaped by the strategic choice of management. Analysis of respondents' desired involvement in the local-medium (work-related) decisions indicates that respondents do not have any revolutionary zeal to control work-related decisions. The predominant mode of desired involvement at both research sites is joint-consultation.

As expected, employees of the small-sized company, overall, perceived more involvement in the formulation of work-related and organizational level decisions while employees at the medium-sized company, perceived more involvement in such organizational level decisions as wages, dismissals and grievances and working conditions (e.g. fringe benefits). As the latter decisions are formulated through the collective bargaining process, collective bargaining appears to be more effective than other participatory forms in ensuring employee involvement in such decisions. Furthermore, inspite of the fact that at the small-sized company all the distant level decisions are open to participation, both respondent groups did not perceive a marked involvement in long term economic decisions like 'Closures and Mergers' and 'Capital Investments.' In the small-sized company, employees are only present at these meetings to discuss these long term economic decisions and obtain information without having the power to block issues they oppose.

It is suggested that alternative decision-making structures at the organizational level only provide employees with greater visibility

and formality in decision-making and policy formulation. However, the presence of employees at the meetings serves a commitment mechanism function as indicated by their high organizational commitment compared to the respondents at the medium-sized company. The lack of employee involvement at this level, especially in long term economic decisions, is attributed to employee lack of expertise but more importantly, to the power ownership or formal authority confers on management to decide which issues are open to participation and the extent of employee involvement.

As a direction for future research the study suggests a closer investigation into the nature of the relationship between participatory work experience and blue-collar status/orientation.

DEDICATION

To Dorothy Jill
In Whose Veins Flows
The Milk of Human Kindness

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Table of Contents

<u>Chapter</u>		<u>Page</u>
1	Introduction	1
	Overview	1
	Variation in Participatory Structures: A Literature Review	3
	Types of Participatory Structures	11
	An Elaboration of the Research Problem and Objectives	19
	Relevance of the Study	24
	Organization of the Thesis	26
	Footnotes	29
2	A Review of the Structural-Contingency Framework	32
	Introduction	32
	The Development of Structural-Contingency Framework	32
	Technology as the Dominant Variable	36
	Size as the Dominant Variable	49
	Environment as the Dominant Variable	59
	Strategic Choice as the Dominant Variable	68
	Organizational Autonomy as the Dominant Variable	73
	Occupational Structure as the Dominant Variable	77
	Explanatory Framework	80
	Size Argument	80
	Technology Argument	83
	Environment Argument	85
	Strategic Choice Argument	87
	Organizational Autonomy Argument	89
	Occupational Structure Argument	90
	Summary	92
	Footnotes	94
3	Methodology	99
	Introduction	99
	The Comparative Method	99
	Research Sites	101
	Data Collection Techniques and Research Ethics	102
	The Problem of Access and Informed Consent	102
	Systematic Observation	103
	Formal and Informal Interviews and Maintenance of Confidentiality	104
	Documentary Materials	107
	Operationalization of Variables in the Explanatory Framework	107

<u>Chapter</u>	<u>Page</u>
Independent or Explanatory Variables	108
Main Dependent Variable	111
Outcome Variables	111
Data Analysis	113
Summary	116
Footnotes	117
 4	
The Companies: History, Business and Participatory Structures	119
Introduction	119
A: The Group at Cox	119
History	119
The Structure of Business and Organization of Work	121
a) The Products Group	122
b) The Professional Services Group	125
Demographic Characteristics of Employees	129
Techno-Economic Environment	130
Management Philosophy	132
Structures and Content of Participation	135
Background	135
Work-Level Participatory Structures	136
a) Employee Self-Management	136
b) Group Autonomy (Functional Communities)	137
Organizational Level Participatory Structures	138
a) Committee for the Success of the Person	138
b) Participatory Voting on Pay	141
c) Grievance Procedure	142
d) 'Right to Share' Meetings	143
e) 'Town Hall' Meetings	145
f) Management Committee	145
 B: Firestone Hamilton Plant	146
History	146
Business Structure	147
Organization of Work in the Tirerroom	148
Demographic Characteristics of Respondents in the Tirerroom	151
Techno-Economic Environment	152
Management Philosophy	155
Structures and Content of Participation	158
Background	158
Work-Level Participatory Structures	159
a) Storyboarding	159
b) Just-In-Time	161
Organizational Level Participatory Structures	165
History of the Plant's Union	165
Organizational Structure	165

<u>Chapter</u>		<u>Page</u>
	Collective Bargaining as Organizational Level Participation	166
	General Personnel Policies	168
	Grievance Procedure	168
	Tireroom Training Program	168
	Procedures and Policies for Hiring and Internal Transfer	169
	Summary	170
	Footnotes	171
5	Variation in Participatory Structures: Towards an Explanatory Framework	174
	Introduction	174
	Form and Content of Participation in the Two Companies	174
	Size and Form and Content of Participation	179
	Nature of Product and Technology and Form and Content of Participation	184
	Techno-Economic Uncertainty and Form and Content of Participation	191
	Strategic Choice and Form and Content of Participation	196
	Organizational Autonomy and Form and Content of Participation	201
	Occupational Structure and Form and Content of Participation	205
	Summary	209
	Footnotes	213
6	Respondents' Perception of Involvement in Decision-Making and Primary Individual Level Outcomes	214
	Introduction	214
	Respondents' Perception of Involvement in Local-Medium Level Decisions	215
	Respondents' Desired Involvement in Local-Medium Level Decisions	229
	Respondents' Satisfaction with Perceived Involvement in Local-Medium Level Decisions	232
	Respondents' Perception of Involvement in Distant Level Decisions	235
	Respondents' Satisfaction with Perceived Involvement in Distant Level Decisions	245
	Primary Individual Level Outcomes	246
	Summary	250
	Footnotes	253

<u>Chapter</u>		<u>Page</u>
7	From Scheme to Practice: The Dynamics of Participation in The Two Companies	254
	Introduction	254
	A) The Dynamics of Participation at The Group at Cox Respondents' Understanding of Work-Related Participatory Structures	254
	The Process of Respondents' Involvement in Work-Related Participatory Structures	256
	Respondents' Understanding of Organizational Level Participatory Structures	262
	The Process of Respondents' Involvement Through Organizational Level Participatory Structures	264
	Organization of the Meeting	265
	Effectiveness of Participatory Structures at the Organizational Level as Vehicles for Respondents' Involvement in Decision-making.	270
	B) The Dynamics of Participation at The Firestone Hamilton Plant	274
	Respondents' Understanding of the Structures of Work-Related Participation (Storyboarding)	274
	The Process of Involvement Through Storyboarding	276
	Organization of the Meeting	277
	Effectiveness of Storyboarding as Vehicle for Respondents' Involvement	284
	The Dynamics of Just-in-Time as Involvement Mechanism	287
	Operation of Just-in-Time in the Tireroom	288
	Effectiveness of Just-in-Time as Vehicle for Respondents' Involvement	289
	Summary	292
	Footnotes	294
8	Summary and Conclusions	295
	Introduction	295
	Summary of the Findings	296
	Objective One	296
	Objective Two	299
	Objective Three	301
	Implications of the Findings	304
	Directions for Future Studies	306
	Footnotes	309
	Appendix A Data Gathering Instruments	310
	Bibliography	328

List of Figures

<u>Figure</u>		<u>Page</u>
1	Gower and Legge's Four Idea Types of Participation	5
2	IDE's Hypothetical Model of Variable Interactions	7
3	Dachler and Wilpert's Defining Dimensions of Participation	10
4	Perrow's Technology Model	40
5	The Sociotechnical Model of the Impact of Technology on Democratization	47
6	The Aston Conceptual Scheme for the Empirical Study of Work Organizations	50
7	Child's Model of Relationships Between Contextual Variables and Organizational Structure	53
8	Astley's Evolutionary Model of Bureaucratization	57
9	Tung's Typology of Organizational Environments	64
10	A Model of the Explanatory Framework and Interaction of Dependent and Outcome Variables	81
11	Jackson and Morgan's Four Environment Types and Their Structural Correlates	86
12	A Revised Model of the Explanatory Variables Interaction with Moderating and Dependent Variables	212

LIST OF TABLES

<u>Table</u>		<u>Page</u>
1	Demographic Background of The Group at Cox Employees	129
2	Demographic Background of Respondents in the Tireroom.	151
3	A Summary of Comparison Between the Two Companies	171
4	Form and Content of Participation in the Two Companies	176
5	Importance Ranking of Local-Medium Level Decisions	216
6	Perceived Involvement in the Selected Local-Medium Level Decisions	221
7	Desired Involvement in Local-Medium Level Decisions	230
8	Average Mean Desired and Average Mean Perceived Involvement Scores Compared	232
9	Respondents' Satisfaction with Involvement in Local-Medium Decisions	234
10	Average Mean Desired - Average Mean Perceived Involvement Scores Correlated with Satisfaction with Direct Participation	235
11	Importance Ranking of Distant Level Decisions	236
12	Perceived Involvement in the Selected Distant Level Decisions	240
13	Respondents' Satisfaction with Involvement in Distant Level Decisions	245
14	Mean Scores for Outcome Variables	246
15	Kendall Correlation Co-efficients for the Relationship Between Perceived Involvement and Primary Individual Level Outcomes	249



CHAPTER ONE

INTRODUCTION

Overview

The history of industrial development has been punctuated with worker opposition to management's desire to treat the worker as a commodity and rule the workplace by managerial edicts. In recent times, efforts to grapple with the nature of the management-worker relationship has forced the issue into the mainstream of public debate as politicians, academicians and the media have all sought to define the appropriate form of industrial management. The central concern in most of the debates about the workplace and the nature of the relationship between management and employees is a vision of an alternative form of industrial management which will simultaneously enhance the economic viability of work organizations and the quality of work life employees experience.

Workers' participation in management, as a structural expression of this vision, has in recent times been mushrooming in many countries, developed and developing either informally or by legal enactments as structural adaptations or coping mechanisms to re-define the nature of the management-worker relationship. As structural adaptation schemes, participatory structures have taken various forms. However, they are unified in the primacy they give workers in getting involved in the

decision-making process, in their employing organization, either directly or indirectly through representatives.

The burgeoning interest in these schemes has gone hand in hand with a proliferation of studies. However, research on the topic as Strauss¹ noted has been focused on: (a) the extent to which prescribed and/or actual participation is associated with favourable outcomes; and (b) the extent to which prescribed participation is associated with actual participation. While this research is relevant, it has meant that research whose objective is to explain why participatory structures vary across organizations within the same country has been neglected. In countries like Canada, where there is no legal prescription for participatory schemes, organizations that intend implementing a participatory scheme are confronted with the problem of choosing a structure best suited to the organization. The question of choosing between such diverse forms of participation involves a careful analysis of the contingencies operative in any organization. So conspicuous is the problem that in his discussion of the subject, Walker² called for studies that will be concerned to investigate:

"Why in a particular situation workers' participation in management takes certain forms and covers certain areas of management, what determines the amount (scope, degree and extent) of workers' participation in management and what are its effects?"³

The study reported here attempts to provide answers to these questions.

Variation in Participatory Structures: A Literature Review

Since Walker's call, there has been a surge of research activity geared towards exploring the variables that account for the emergence of, and variation in, the design of participatory structures. In one study in this tradition, Poole⁴ treated participation as a dependent variable and proposed that workers' participation and control is a function of certain underlying or latent forces and a climate of values which may or may not be conducive to evolution along participatory lines. He distilled his key independent and dependent variables in a three-equation model which formed the central propositions of his study. These propositions are: (a) workers' participation and control are functions of the latent power of particular industrial classes, parties or groups which may or may not be favourable to participation experiments; (b) latent power is a function of economic factors, technological factors and government action; and (c) values about participation and control are functions of the existing levels of workers' participation and control, latent power, government action and ideologies. Data to validate these propositions were provided by an examination of an array of practices and programmes for extending workers' participation and control of decision-making processes.

In Poole's view, the usefulness of his work lies in its attempt to rectify shortcomings in previous works which have failed to recognize that it is by augmenting the latent and oppositional power of workers (and stimulating the values conducive to experiments of this kind) that

progress can be made towards the establishment of workers' participation in decision-making at every level. Although his study did provide an insight into conditions that might influence the adoption of workers' participation and control, he did not investigate how organizational contingencies may account for variation in the form and content of participation implemented which this study is concerned to explore.

Gower and Legge⁵ investigated the extent to which the form of participation is influenced by the organizational context in which it is set. Employing a definition of participation that highlights three dimensions - influence, interaction and information sharing, they proposed that: "the degree of and relationship between the three elements of participation and the form in which they are expressed are a function of the context in which they are set."⁶ They employed Burns and Stalker's notion of mechanistic and organic management and the rate of stability in an organization's context and from these two concepts, they proposed a four-fold classification of organizational contexts. These are mechanistic-attenuative, organic-attenuative, mechanistic-accentuative and organic-accentuative. They then mapped the four contexts on four ideal types of participation - regulatory, arbitrary, open and quasi-participation. Their emphasis was to suggest a best-fit approach to the design and implementation of improved employee participation as part of a general change strategy indicated in the figure below.

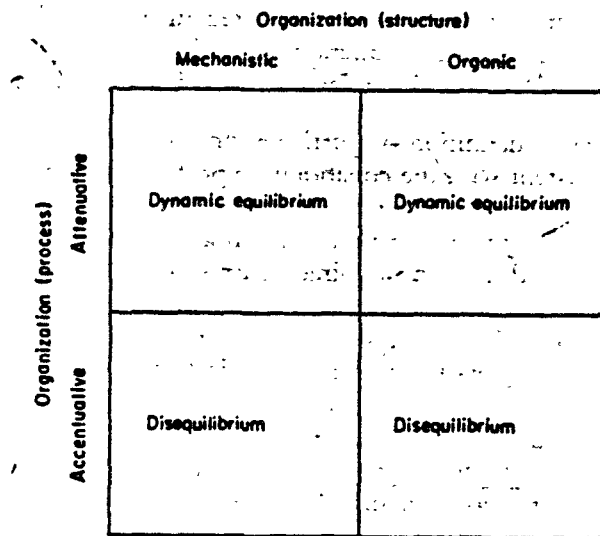


Figure 1 Gower and Legge's four 'ideal types' of participation

Although Gower and Legge's study aimed at exploring the impact of organizational context on form of participation, their explanatory scheme is deterministic in that it eliminates the role of organizational decision-maker's choice. It has been pointed out in the structural contingency literature that, there are no inviolable relationships between contextual variables and organization structure - an observation that informs the explanatory framework proposed in this study.

Based on a broad range of workplace democratization schemes, Bernstein⁷ analyzed their underlying principles and distilled them into a model of workplace democratization. The components of this model which he considered to be sine qua non for any successful attempt at

workplace democratization include: participation in decision-making, economic return to the participants based on the surplus they produce, sharing management level information with employees, guaranteed individual rights, an independent appeal system and a complex participatory democratic consciousness. Bernstein utilized information based on his model to argue that unsuccessful participatory schemes were caused by the failure of implementers to realize that the components of his model are interrelated and therefore ought to be implemented simultaneously.

While Bernstein's model does provide an insight into the internal dynamics of participatory schemes, his explanation of the failure of participatory structures is not complete. It could be argued that some participatory schemes may have failed because the scheme was not congruent with the context of the organization in which it was introduced and the structural preferences of the 'dominant coalition'. Furthermore, his model cannot account for variation in the form and content of participatory schemes as they are embedded in the causal texture of various organizations. The objective of this study is to explore that.

The most sophisticated attempt to explore variation in participatory structures was undertaken by the Industrial Democracy in Europe Research Group.⁸ In an international comparative study, these researchers were concerned to investigate : (a) how different forms and degrees of formalized rules and regulations for the involvement of employees in organizational decision-making account for the different

distribution of actual employee involvement and influence; (b) to what extent do situational and contextual factors moderate or co-determine the de facto fulfillment of participative norms?; (c) what are the social and psychological consequences of de jure and de facto participation; and (d) whether differences between samples of respondents or organizations reflect underlying differences in socio-political structure and industrial organization. Their model postulates that patterns and structures of de jure participation have a systematic determinate effect upon the distribution of influence and involvement. However, they contend that a number of contextual and contingent variables such as technology, organizational differentiation, formalization, size and skill level moderate the hypothesized relationships. Their hypothetical model is shown below.

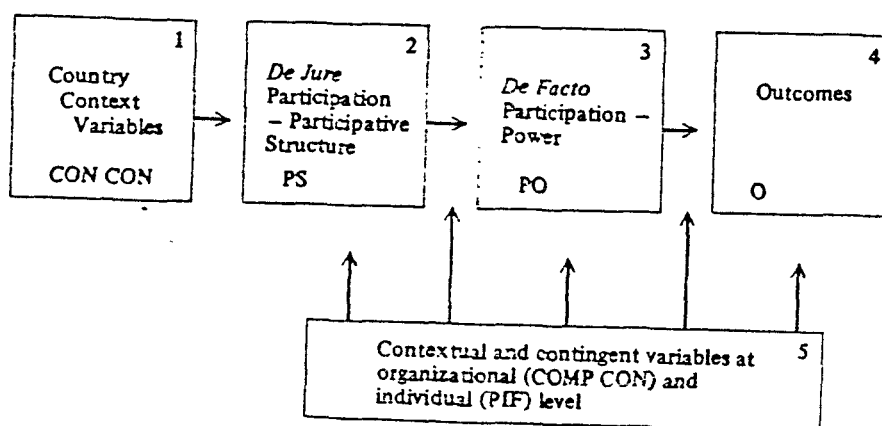


Figure 2 Hypothetical model of variable interactions

The IDE Research Group found that high levels of employee participation are a function of an intricate interrelation of internal management practices and externally promoted support systems based on formal rules or collective bargaining agreements. On the basis of this finding, they asserted that these variables predict influence and power distribution better than contextual factors. Although their finding implies that the form of participation is an outcome of various socio-political factors rather than of structural opportunities or constraints, they nevertheless pointed out that where there is no explicit external support system, like laws enforcing industrial democracy, it is possible that contextual factors can predict the form and content of participation.⁹ As there are no formalized governmental support systems in Canada it may be assumed that, consistent with the assertion of the IDE Research Group, the form and content of participation can be predicted not only from contextual variables but also the structural preferences of management. However, management's status or autonomy, is what determines their ability to initiate structures in tune with their preferences.

Dachler and Wilpert,¹⁰ proposed a conceptual framework for discussing workers' participation based on four defining dimensions and their interrelationships. These include: (a) social theories underlying participation; (b) properties of participatory systems that is, structures and processes along which different kinds of participatory schemes may vary; (c) contextual boundaries within which participation occurs; and (d) outcomes of participation. The dimension of most

relevance to this study is the contextual boundaries identified by them.

They proposed that:

Contextual factors set limits to the potential of participation by moderating the degree to which the values, assumptions, and goals of implementers are reflected in various configurations of participation properties and the degree to which characteristics of participatory systems will result in certain outcomes.¹¹

In effect they proposed a 'boundary setting' function of contextual factors which fits the contingency view of participation. Lauding the IDE Research Group's effort to analyze participation as part of the social system of the organization, Dachler and Wilpert suggested that future researches on participation should be cast in that framework. They therefore pointed out that:

At present it would be difficult from available research efforts to construct interrelated hypotheses which would specify the organizational characteristics under which certain participation potentials could be achieved and maintained.¹²

Figure three illustrates their conceptual scheme.

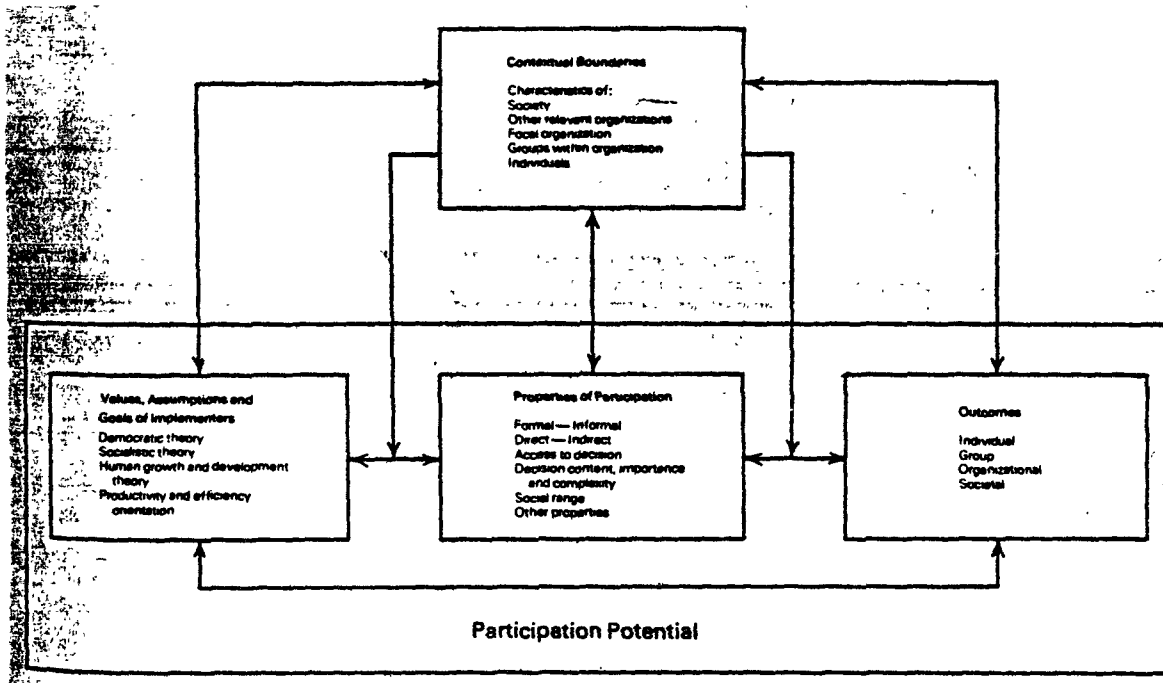


Figure 3: Dachler & Wilpert's Defining Dimensions of Participation

Although they indicated an important direction for research on participation, very few studies have responded to their call.¹³ The present study aims at investigating variation in the form and content of participation so that "interrelated hypotheses which would specify the organizational characteristics under which certain participation potentials could be achieved and maintained are identified." The next section will discuss the known variety of participatory structures.

Types of Participatory Structures

A common denominator in the various definitions and objectives of participation is the idea that workers who are managed should have influence in the decisions which affect them. However, the process by which this influence has been structurally channelled is bewilderingly diverse. At the most general level, various writers have identified two forms of participation - direct and indirect. Direct participation is defined as that which focuses on the individual worker and the immediate workgroup or what Bluestone calls "managing the job."¹⁴ Indirect participation or in Bluestone's terms 'managing the enterprise'¹⁵ on the other hand, includes all the processes whereby worker's representatives influence decision-making at higher organizational levels.

Direct Participatory Schemes

Scientific management prescribed four basic managerial tasks - planning, organization, leading and controlling which invariably distinguishes between planning and execution and in the process, reduces the role of the worker to the performance of fragmentary tasks. The objective of direct participatory schemes is to reverse this trend and provide employees some influence in the four supposedly classical managerial functions. Guest,¹⁶ distinguished between two forms of direct participatory schemes: (a) those that are primarily concerned with communication such as briefing groups, suggestion schemes and problem solving groups; and (b) job redesign.

The first category of direct participatory schemes are generally informal in nature and are normally grafted onto the existing hierarchical structure. Among schemes of this sort, the best known are problem-solving groups. These groups normally involve the employee in the identification, analysis and solution of a number of job related problems. Problem solving groups could involve a whole work group or department with the responsibility of addressing job related problems outside of collective bargaining agreements. In the words of Guest:

The central aim of a problem solving group is to provide a forum for communication, problem identification and discussion so that varying points of view may be better understood and a climate created in which problem resolution is tackled constructively.¹⁷

Briefing groups are another informal type of direct participation. These are normally communication networks established between management and workers at the department or work level. They therefore serve as mechanisms through which suggestions, ideas and information originating from the shopfloor are transmitted to management and management in turn, transmits relevant information to the workforce. This is made possible by holding regular meetings and the briefing is normally done by a management representative. As Benson has observed:

The subject matter has been defined as the information which employees need to know in order to do their jobs more efficiently and effectively as well as details of the decisions and policies which could affect their will to work.¹⁸

The most popular forms of direct participation are job redesign schemes like job enrichment and autonomous work groups which are responses to the miniaturization and oversimplification of jobs. Job enrichment or vertical role integration, refers to the process whereby jobs have been designed in such a way as to provide more scope for autonomy, achievement and responsibility. Job enrichment has its theoretical anchorage in the influential 2-Factor Theory of Herzberg and his associates. In a study by Herzberg et al.,¹⁹ they found that factors related to the job content which they called motivators are more important in determining employee satisfaction than factors peripheral to the job (hygiene factors). On the basis of this finding, Herzberg et. al. argued that to enhance employee motivation, jobs should be designed to include more motivator factors like autonomy, challenge, responsibility and advancement.

Unlike job enrichment, where the focus is on individual job redesign, autonomous work groups focus on the redesign of group work and interdependence between work group members. This group is responsible for the allocation, distribution, planning of work and meeting production schedules. The theoretical basis of autonomous work groups is found in the socio-technical approach of the Tavistock Institute.²⁰ The Tavistock researchers argue that work organizations involve two components - technological and social, and joint optimization of these two systems is a prerequisite for effective organizational functioning. Autonomous work groups represent the attempt to design work in accordance with this line of thinking and to provide employees the

classical management functions on a group basis.

Implementation of these direct forms of participation, especially those involved with job redesign might mean a substantial restructuring of organizations. The adoption of a wrong strategy would affect not only the performance of the company but also the nature of interpersonal relationships. The task of this research effort is not only to investigate how these participatory schemes are experienced by the workers but also the extent to which the peculiarities of the organizations studied in terms of contextual variables and structural preferences of management influenced the adoption of any particular scheme.

Indirect Participation

In the view of Dachler and Wilpert,²¹ indirect participation is a mediated involvement of organization members in decision-making through some form of representatives. Unlike direct forms of participation, indirect participation forms are often part of the institutionalized industrial relations system at either the national or plant level. They include self-management, works council, board representation and collective bargaining.

As a form of participation, self-management represents the most extreme attempt to run the enterprise on democratic lines. In his discussion of self-management in Yugoslavia, Adizes²² distinguishes between administration and governing function which together make up the management function. The governing function is the responsibility of

the general membership while the elected or nominated perform the administrative function. The governing function is exercised through a workers' council which is responsible to the collective or general membership of the organization. Above the workers' council is the governing board whose members are elected by the workers' council from among its ranks. The governing board is charged with the responsibility of translating council decisions into operative tasks for implementation by the administrative organ composed of the director of the company, directors of departments and supervisors.

The second form of indirect participation is board representation, employee membership of management bodies or worker directors. In this system, employee representatives sit as full members on supervisory or management bodies and help in the running of the company in which they are employed. An ILO publication²³ has pointed out that workers' representatives on boards of directors or supervisory boards have usually the same rights and obligations as shareholder representatives. With the exception of the West German codetermination model, where there is parity between employee representatives and management representatives, employee representatives are usually in the minority. On these boards, employee representatives participate in decisions of direct relevance to their companies such as mergers, closures or general policy decisions.

Work council represents another variant of indirect participation whereby elected workers' representatives are offered an opportunity to deliberate with representatives of management on matters affecting the

operation of the enterprise. An ILO publication has pointed out that "The establishment of statutory works council is probably the most widespread and best known means of associating workers with decision in undertakings through machinery which can be geared in with Trade Union while it remains in principle distinct from them both inside and outside the undertaking."²⁴ Works councils are usually concerned with information, consultation, co-decisions and even direct autonomy in the management of some of the activities of the undertakings.

The preceding discussion on forms of indirect participation are very extensive in Continental Europe and only to some extent in the United Kingdom. The most popular form of indirect participation in the United Kingdom and North America is collective bargaining, whereby representatives of the union meet management representatives at specified times to exert influence on managerial decisions through negotiation. Bolweg defines collective bargaining as "a process of decision-making which has as its overriding purpose the negotiation of an agreed set of rules to govern both the substantive and procedural terms of employment relationship, as well as the relationship between the bargaining parties (management and union) themselves."²⁵

Other forms of Workers Participation:

Profit-Sharing:

Profit-sharing schemes are often times described as participatory if only because they afford employees the opportunity to participate in

the running of the enterprise. The term profit-sharing is used to refer to:

A definite arrangement under which employees regularly receive in addition to their wages or salaries a share on some predetermined basis of the profits of the business, the sum allocated to employees varying with the level of profits.²⁶

Following Chavances, Bolweg²⁷ distinguishes between two types of profit-sharing schemes - stimulation bonus and participation bonus. Stimulation bonus directly induces the worker to increase production whereas participation bonus perceives productivity and profit increases as a result of indirect worker involvement. As practised today profit sharing has three basic elements:

- (a) Management practices: leadership and practices in the organization that create a positive climate for excellence and encourage a high degree of employee commitment and participation.
- (b) Employee participation: A system and structure that enables all employees to become more involved in solving problems of productivity, quality and service.
- (c) Shared reward: A reward system that shares productivity gains above a predetermined base between owners and employees.²⁸

Producer Co-Operatives and Employee-Ownership

These have become increasingly popular in both industrialized and developing countries and provide an alternative to current forms of ownership of firms. In such work organizations, the employee owners are entrusted with the classical management functions and thereby wield a great deal of influence in the management of their undertakings. Generally, both forms of participation ensure a system whereby authority lies with the general membership which in turn elects the management board. With these forms of participation, emphasis is not so much on the redesign of jobs but the authority to direct the organization. Besides participation in decision-making, employees also share in the profits of the organization. Furthermore, it is not unusual to find professional management employees entrusted with the administering of the organization.

In spite of the distinction between direct and indirect forms of participation, Walker has remarked that the two approaches are not mutually exclusive. In his view "more progress would be made toward industrial democracy if it were recognized that we cannot expect any form of industrial democracy to perform the function of others."²⁹ However, what are the pressures which have instigated demands for participation resulting in such diverse forms of participation as structural responses? In the next section we enlarge the statement of the research problem and outline the objectives of the research reported here.

An Elaboration of the Research Problem and Objectives

The idea that workers should have an influence in the formulation of organizational decisions is an old persistent one. Within the past few decades however, the idea has boomeranged back into the mainstream of public debate. The resurgence of interest in the concept of participation is traceable to (a) the nature of authority and the design of work in contemporary work organizations and (b) the spread of democratic consciousness in society.

The advent of the factory system turned the worker fully into an employee. For the first time, all such workers were gathered under one roof and the methodical and rational co-ordination of their work activities gave rise to the management function. However, unlike the other factors of production, management could not predict with any degree of exactitude the amount of work a worker will perform on any given day. In order to obviate this problem, and achieve some predictability in the production function, it became necessary for the employer to devise structures that would ensure a certain level of obedience and co-operation on the part of employees. As Bendix has observed, 'subordination and discipline are indispensable to economic enterprises'.³⁰ In contemporary work organizations, these goals have been satisfied through the elaboration of various control systems.

In his time and motion studies, Taylor prescribed a one-best way by which work tasks can be performed. Scientific management was based on detailed and systematic analysis of tasks which not only demanded that operation of machines be scientifically engineered, but also the

operations of the worker be planned with equal precision. Delamotte and Walker observed that:

This involved a minute division of tasks among the workers that reached its ultimate degree in assembly line work where each worker may perform operations taking less than a minute, often with little knowledge of the significance of the task to the total operation. It also reduced the freedom of the worker to introduce variety into his task or into the manner of carrying it out.³¹

As a method of production, scientific management succeeded in eliminating knowledge of the job process from the shopfloor and invested it in the hands of employers or their hired managers, thereby ensuring a technologized control system. Braverman noted of scientific management that:

Control has been the essential feature of management throughout history but with Taylor, it assumed an unprecedented dimension.... Taylor, raised the concept of control to an entirely new plane when he asserted as an absolute necessity for adequate management the dictation to the worker of the precise manner in which work is to be performed.³²

Although technical control provided structures within which management ensured the methodical and rational control of labour, it was not by itself enough to control the firm's main industrial labour force. To control the labour force administratively, management resorted to Weber's rationalized administrative system, bureaucracy. Bureaucratic control with its defining characteristics of division of labour, hierarchy of authority, standardized procedures, formalized job

descriptions, and carefully spelt out rules and procedures for reward and penalties for poor performance, became a technical solution to the administrative confusion that resulted from increases in the size of the economic enterprise. Edwards describes bureaucratic control thus:

In its most fundamental aspect, bureaucratic control institutionalized the exercise of hierarchical power within the firm. The definition and direction of work tasks, the evaluation of worker performances and the distribution of rewards and imposition of punishments all came to depend upon established rules and procedures, elaborately and systematically laid out.³³

Jointly, technical and bureaucratic control systems have served as the cornerstones of industrial management. However, based simply on efficiency considerations, it has treated labour as a commodity and therefore has had a debilitating effect on industrial employees. Many researchers have either empirically demonstrated or commented on the effect of simplified work and bureaucratic control on the employee. Argyris, for example, writes that:

Typically, the rank and file worker in modern industry finds himself in a work environment where he can use few abilities, and exercises little or no initiative or control over his work. This may result in him experiencing a decreasing sense of self-control and self-responsibility, and the cumulative effect over a period of time may be to reduce his self-esteem, his satisfaction in his life, and indeed his values about the meaning of work.³⁴

The most penetrating indictment of the nature of industrial management, however, came from Karl Marx.³⁴ In his alienation thesis,

he contended that the nature of industrial management has resulted in alienation of employees which he perceived to be a quality of personal experience resulting from particular social arrangements. He distinguished between alienation of the thing and self-alienation. Based on the latter type of alienation, he argued that industrial workers lack a sense of purpose in their work as increased division of labour strips them of responsibility and meaninglessness, invariably, becomes part of their working life. Thus, instead of work being a vehicle for self-actualization, it becomes a labour of self-sacrifice and mortification. Marx's work was emblematic of conservative and radical critics of industrial civilization.

Whose views of industry and industrial relations were not a reflection of experience. Their critique of industry tended to project the disquiet of intellectuals upon a prototype of the industrial worker who longed for a return to the creative satisfaction of individual workmanship and collective participation.³⁶

If earlier critiques of industrial management were not a 'reflection of experience', modern social scientists interested in organizational life have documented employee discontent at the workplace which has been linked to the nature of authority and design of work. The work of these social scientists has, no doubt, fuelled the debate and catalysed the search for an alternative form of industrial management. Although the exercise of authority will always be a defining characteristic of industrial management, the reasons for the demand for worker participation schemes, as a structural alternative to

the conventional form of industrial management, and the hopes accompanying it, were neatly distilled in an OECD statement thus:

The current economic situation with its reduced possibilities of growth has emphasized the need for mechanisms, which will adequately ensure the pursuit of goals other than economic growth such as improvement in the quality of life and working conditions.... The pursuit of such goals can probably be secured only by the existence of decision-making processes in enterprises which have a broader more democratic base than such processes often have at present.³⁷

However, as structural adaptation mechanisms, worker participation schemes have taken several forms. On what basis then do organizations choose one form of participation over the others? It is our contention that forms of participation do not just happen and for that reason there is a need to explore those variables that shape the form and content of participation as it is embedded in the 'causal texture' of any specific organization. The objectives of this research then are geared towards exploring why the companies studied have different participatory structures and employee experience of participation in the two companies. The objectives of this research formally stated are:

- (a) to explore the extent to which the variables identified in the explanatory framework proposed in the second chapter account for variation in the form and content of participation in the two companies studied;

- (b) to investigate the extent to which respondents perceive themselves as being involved in the formulation of selected decisional issues and the influence of perceived involvement on such outcome variables as job satisfaction, job involvement and organizational commitment;
- (c) to investigate the operation or dynamics of the participatory structures in the two companies as opposed to the static description in the formal designs.

Relevance of the Study:

Evidence of employee alienation has been documented in a multitude of empirical studies. Generally, the detachment of employees from their work organization has been attributed to the design of work and authority structures in contemporary organizations. Attempts to design alternative structures of industrial management which will simultaneously enhance economic viability and employee quality of work-life have resulted in workers' participation schemes. So pervasive has the participation solution become that Mulder remarked that 'participation is the most vital problem of our time.'³⁸ In spite of the increasing popularity of participatory schemes, there is no universally acceptable form by which employee influence can be structurally channelled. In view of this, Gardell has stated that:

Today the main problem is not to state the requirements of more humane work organization - these

have been put forward in much the same terms by many - but to develop strategies for bringing about such participation as a living and growing reality.³⁹

However, the problem of making participation 'a living and growing reality' has been exacerbated not only by the variety of participatory forms but also the variability of organizational contexts in which they are introduced. To underline the importance of organizational context variability and the need to adopt structures best suited to the context, Hebden and Shaw wrote:

Participation involves more than grafting onto the company a new set of procedures and institutions. Every company is unique because of the complex interplay of a range of structural variables such as size, markets, location, technology which produce no two companies alike.⁴⁰

The structural contingencies that operate in their contexts is even more pressing because in the implementation of participation

We are confronted with sociopsychological and economic costs attached to the different alternatives. Even in the case where participation through representation, as in work councils, could have observable, positive effects, this is not sufficient. A further step must always be to compare various participation procedures with each other, for example, on the one hand the costs which are connected with participation through work councils and the intended and realized outcomes and on the other hand, the costs and benefits of alternative procedures such as direct participation in the work itself. On this basis a choice must be made in every concrete situation.⁴¹

Choosing between such diverse forms of participation involves raising questions which can only be answered by a careful analysis of

the contingencies which operate in any particular organization. With the exception of the IDE Research Project, which specified and measured contingent factors that shape the form of participation, most studies on participation have either focused on the extent to which prescribed participation is achieved or the extent to which it is associated with beneficial outcomes. The task of this research is to move studies on participation a step further by using a structural contingency framework to explore why the two companies studied have different participatory forms and the factors that influenced the choice adopted. When more studies are conducted in this breadth, "enough would be known about participation in organizations, types, effects and contingencies to attempt realistic engineering of change rather than 'seat of the pants' artistry."⁴²

Organization of the Thesis

Chapter Two traces the development of structural contingency framework and provides a selective review of literature on the framework. It is noted that the framework emerged as a result of dissatisfaction with the inability of the one best way approach to explain variation in organization structure. Furthermore, it is pointed out that the most important development in the framework is the denial of imperative status for the contextual variables of size, technology and environmental uncertainty with the recognition of strategic choice. Other variables outside the framework reviewed here include organization autonomy (status of management) and occupational structure.

Furthermore, the explanatory framework used to explore variation in participatory structures in the two companies studied is discussed.

Chapter Three discusses the research methodology utilized in the study is discussed. This includes a discussion of the comparative method and the strengths of the comparative case-study approach; operationalization of the variables in the framework data analysis techniques and their appropriateness for the study.

Chapter Four presents a detailed description of the companies studied. The demographic background of sampled employees are presented as well as the nature of business of the companies and type of work performed by employees. The history of the company, as well as of the participatory structures, management philosophy and policies and the environment of the companies as it relates to uncertainty are discussed.

Chapter Five offers an explanation of variation in participatory structures in the two companies. The independent variables and the extent to which they impose structural constraints or provide opportunities for the implementation of each company's unique participatory structures are explored. Furthermore, the interaction between the independent variables and the extent to which this interaction influenced or determined each other and ultimately the participatory structures as structural outcomes are analyzed. Propositions are presented to explain how these variables impose structural constraints or provide opportunities for the implementation of participatory structures.

Chapter Six is a presentation of the results of statistical analysis pertaining to employees perception of their involvement in the formulation of specific decisional items presented them. Supported by observational data, these statistical analyses are examined to find out if there are differences in participation at the two companies. Furthermore, the influence of perceived participation on job satisfaction, job involvement and organizational commitment is presented.

Chapter Seven focuses on employee experience of participation or the internal dynamics of participation in the two companies. It explores the functioning of participation at the two sites as gleaned from observation at meetings and employee evaluation of the effectiveness of these meetings as forum for employee involvement in formulating decisions. In effect, the chapter focuses on the differences between the formal operation of the participatory structures and their actual operation.

Chapter Eight is the concluding chapter. It provides a summary of the findings discussed in relation to the specific objectives of the study. The implications of the findings are discussed and directions for future research are suggested.

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CHAPTER 2

A REVIEW OF THE STRUCTURAL-CONTINGENCY FRAMEWORK

Introduction:

As there are several types of participatory structures, under what conditions is one likely to be adopted rather than the others? Answers to such questions are rooted in a framework that tries to explain variations in organizational structure by relating them to such contextual variables as nature of product and technology, size, environment and more recently, strategic choice. In the tradition of structural contingency, structure has always been treated as a dependent variable and therefore contingent upon the aforementioned contextual variables and strategic choice. In this chapter, the development of the structural contingency framework is traced, the literature on the framework is selectively reviewed, including that on organizational autonomy (status of management) and occupational structure, and the influence of both on organizational structure. The general themes emerging from the review are then used to develop an explanatory framework.

The Development of Structural-Contingency Framework

Early organizational theorists like Taylor (scientific management) and Fayol and Urwick (administrative theory) were concerned to discover a set of universal principles which would replace the

traditional intuitive rules of administrative action. They addressed themselves to the question: Given the general function of an organization how can the organization be structured and what are the basic functions for the achievement of the organization's purpose?¹ Their solution took the form of a set of administrative principles which defined the formal structure of the organization and furthermore, helped the manager administer his organization in an efficient manner.

A parallel but independent development led by Max Weber, sought to identify the structural characteristics of the administrative framework within which a legal rational authority is exercised. Although his problem was to explain the structural interrelations that gave rise to the characteristics typically found in bureaucracies, he nevertheless pointed out that the bureaucratic system was the most technically efficient way of organizing work. The relationship between the structural elements of bureaucracy and human elements investigated by such writers as Merton, Selznick, Gouldner and Blau led to the discovery of the dysfunctions of bureaucracy. Merton, for example, found that although use of rules ensures reliability and predictability, as procedural regulations, they could be internalized and hence become ends in themselves.²

The discovery that bureaucracy can indeed be dysfunctional and the subsequent search for the best management style culminated in the Human Relations Approach. Their most important contribution, arising out of the Hawthorne studies, conducted under the direction of Mayo, and then Roethlisberger and Dickson, was the discovery of the extent to

which group norms influenced attitudes of group members and their subsequent behaviour. The best management or supervisory style prescribed by Human Relationists was participative management which would allow subordinates to exercise some self-control on such routine matters as scheduling of holidays. A running theme in these early theories was their universalistic orientation. Scientific management and bureaucracy prescribed a one best way to design formal organization structures whilst the Human Relationists emphasized a one best management or supervisory style.

For some time however, organizational theorists have witnessed the development of a stream of researches, whose major findings have shattered the myth of the one best way approach. These studies have also treated structure as a dependent variable, and by so doing have discovered that structure is contingent upon certain contextual variables. This stream of thought called the contingency paradigm or framework derives its empirical and theoretical heritage from the works of such scholars as Burns and Stalker, Woodward, Thompson, Lawrence and Lorsch all of whom have indicated that the one best way approach is less universal when subjected to close scrutiny in the laboratory of organizational life.

In the tradition of contingency theory, answers have been sought to three separate but related issues: (a) the relationships among the structural characteristics of organizations; (b) the determinants of variability in the structural characteristics of organizations and (c) the relationship between structural variability and organizational

outcomes.³ Characterized by causal thinking and an open system approach, contingency theorists perceive predictor or contextual variables as conditions beyond the control of the organization. Accordingly if an organization is to survive, it must adapt to these situational or functional imperatives. In a discussion of the contingency paradigm, Kast and Rosenweig wrote thus:

The contingency view of organizations and their management.... emphasizes the multivariate nature of organizations and attempts to understand how organizations operate under varying conditions and in specific circumstances. Contingency views are ultimately directed toward suggesting organizational designs and managerial systems most appropriate for specific situations.⁴

Although a multiplicity of contextual variables has been examined, only the literature covering those contextual variables which relate to this thesis and which have received the widest empirical support, size, nature of product and technology, environment, strategic choice, organizational autonomy (status of management) and occupational structure, will be reviewed here. The objective is to illustrate the relationship between these variables and some dimensions of organization structure and how they could exert pressures on the one hand and limitations on the other in shaping the form of participation. The review will therefore not focus on conceptual and methodological problems that surround these empirical studies.

Technology as the dominant variable

The elevation of technology to an imperative status in the determination of organizational structure is credited to the work of Joan Woodward. In her south-east Essex studies, Woodward was concerned to find answers to the questions: "How and why do industrial organizations vary in structure and why do some structures appear to be associated with greater success for the organization than others."⁵ At the first stage of the research, data were collected on the history, background and objectives of the 100 factories she studied, manufacturing process, formal organization and commercial success. Unable to find any relationship between classical management principles and the success of the firms, Woodward and her associates focused on the impact of technical variables. It was then that they found a pattern. She consequently wrote:

".... for the first time in the analysis patterns became discernible: firms with similar products system appeared to have similar organizational structure. There were of course differences between some of the firms placed in the same production category but the differences inside each category were not on the whole as marked as those between categories.... The patterns which emerged in the analysis of the data indicated that there are prescribed and functional relationships between structure and technical demands."¹⁶

Woodward classified the technological systems of the firms into unit or small batch, mass or large batch and process production, representing a scale of technical complexity. She found a number of organizational characteristics which related to technology in a linear

direction. Such characteristics included number of levels, chief executive's span of control, ratio of managers to total employees, ratio of direct to indirect workers and clerical and administrative personnel to manual workers. Using Burns' mechanistic and organic typology of organizational forms, she found that the extremes of her scale of technical complexity had organic forms and the middle, mechanistic. Furthermore, she found that within particular technological categories, the more successful firms had similar characteristics whilst the less successful firms had organizational characteristics that deviated most from the median. She summarized her most general finding thus:

"The fact that organizational characteristics, technology and success were linked together in this way suggested that not only was the system of production an important variable in the determination of organizational structure but also that one particular form of organization was not appropriate to each system of production. In unit production, for example, not only did short and relatively broadly based pyramids predominate, but they also appeared to ensure success."⁷

Woodward's conclusion that firms at the extreme of her technical scale were likely to have organic structures and those in the middle mechanistic structures has implications for a discussion of the forms of participation. In large batch or mass production technological settings, the resulting mechanistic structure promotes very formalized and routinized work environments and a large number of semi or unskilled workers because work-related decisions have been pre-empted by technology. In unit and small batch and process technologies on the

other hand, the organic structure promotes informal and non-routinized work environments thereby providing the group of skilled workers opportunities to make work related decisions. Woodward's study therefore highlights the influence of technology in providing structural opportunities or constraints in developing various forms of participation.

The publication of Woodward's results stimulated a flurry of research activity either to substantiate her finding or to criticize it. A decade after the publication of Woodward's finding, Zwerman performed a modified replication of her work in an American setting. Data were collected from fifty-five firms, in the Minneapolis-St. Paul metropolitan area. Technology was trichotomized into unit and small batch, large batch and mass production and process technologies. As in the original Woodward study, there was no support for the notion of a universally ideal structural form. When operating success was controlled, Zwerman found a positive linear relationship between chief executive's span of control, number of management levels and technical complexity. Furthermore, when operating success and organizational technology were controlled, he found that an overwhelming majority of the firms with unit and batch and the process technologies had organic structures, whereas only a minority of large batch and mass production firms had organic structures. He therefore concluded that:

'The findings of the English study were rather strongly confirmed in this replication. The difference in sample and setting provide a basis for viewing the observed relationship as being generalizable to a rather wide range of industrial settings.'⁹

Like the original study, Zwerman's replication implies that since technology type determines the structure of the organization, organizations with unit or small batch and process technologies will be afforded opportunities to introduce participation because employees already experience self-direction at work whereas large batch or mass production technologies will constrain the extent to which participation is introduced because most work-related decisions have been pre-empted by the routine technology.

Empirical studies inspired by Woodward's pioneering effort demonstrated a linkage between technology and structure. Miles,¹⁰ however, noted that such studies did not specify either the dimensions of technology or the underlying theoretical linkages between technology and structure. This shortcoming was rectified by Charles Perrow¹¹ when he developed a two dimensional universal model of technology. He conceptualized technology as being defined by (a) the number of exceptional cases encountered in the work and (b) the nature of the search process that is undertaken when an exception occurs. Furthermore, he postulated that organizations, in the interest of efficiency, knowingly or unknowingly attempt to maximize the congruence between technology and structure. He conceptualized structure on the basis of discretion of sub-groups, their power, basis of co-ordination

within the group and group interdependence. On the basis of his theoretical reasoning, he postulated that variation in organizational structure could be attributed to its technology. In the figure below, he indicates that organizations with high task variability and unanalyzable search methods must develop organic structures to handle the non-routine tasks. On the other hand, organizations with low task variability and analyzable search methods must develop mechanistic structures to handle the routine tasks.

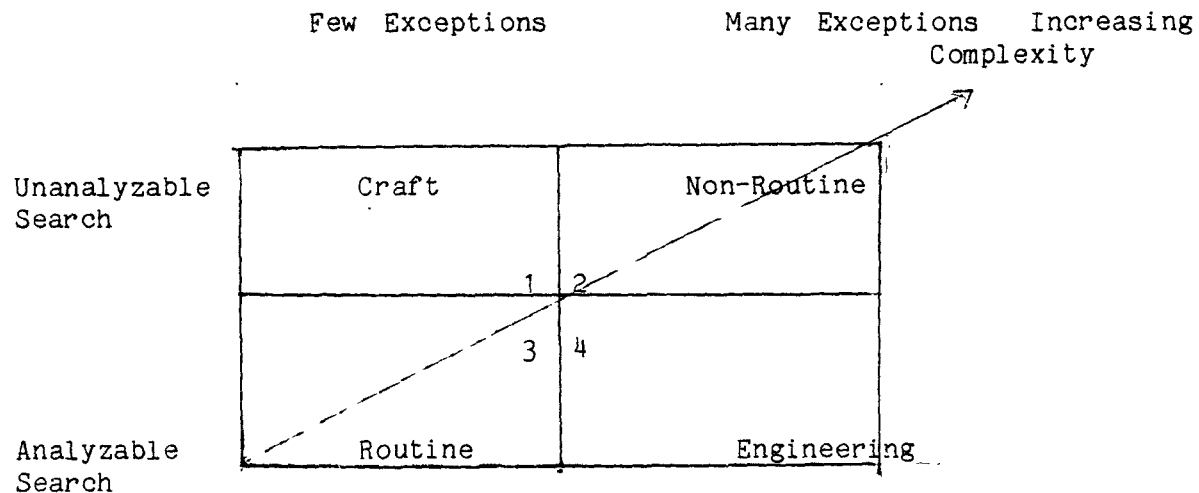


Figure 4: Perrow's Technology Model

Following from Perrow's classification, the nature of an organization's task determines the extent to which participation can be introduced and consequently, its form. According to Perrow's scheme, organizations in quadrant two, characterised by high task variability and unanalyzable search methods, call for a high degree of inter-

dependence between personnel and have high discretion because task activities cannot be predicted. In such organizations, technology has not pre-empted opportunities for task-related decision-making and therefore provides a structural opportunity for the introduction of participatory forms that deviate from the conventional mode of work organization. On the other hand, organizations in quadrant four, with low task variability and analyzable search methods, call for a low degree of task interdependence between personnel and have low discretion precisely because task activities can be predicted. In such organizations therefore, the technological process has pre-empted opportunities for task-related decision-making and therefore constrains the extent to which participation can be introduced.

Andrew Van de Ven and associates,¹² sought to examine empirically, the extent to which two dimensions of unit technology, task uncertainty and task interdependence together with unit size predict variations in the use of three modes of coordination. These were impersonal, personal and group. Task uncertainty was a composite measure of task variability and analyzable search methods, whereas task interdependence was defined as the degree to which work unit members were dependent on each other to carry out their task roles. The impersonal mode of co-ordination is accompanied by programming and involves the use of pre-established plans, schedules, formalized rules, policies and procedures. The other two modes of co-ordination are defined by initial adjustment based on feedback. In the personal mode, work unit members serve as the mechanisms for making mutual task

adjustment through either vertical or horizontal channels of communication. In the group mode, mutual adjustment is achieved through scheduled or unscheduled committee or staff meetings.

Data were collected in sixteen district offices and the administrative headquarters of a large state employment security agency to test three sets of hypotheses relating task uncertainty, task interdependence and work unit size to the three modes of co-ordination. In relating task uncertainty to the three co-ordination modes, it was predicted that: Increases in the degree of task uncertainty for an organizational unit is associated with (a) a lower use of the impersonal co-ordination; (b) a greater use of the personal co-ordination mode and (c) a significantly greater use of the group co-ordination mode. In relating task interdependence to the co-ordination modes it was predicted that: Increases in work flow interdependence from independent to sequential to reciprocal team arrangements will be associated with (a) small increases in the use of impersonal co-ordination mechanism; (b) moderate increases in the use of personal coordination mechanisms and (c) large increases in use of group co-ordination mechanisms. Lastly, the influence of work unit size on the modes of co-ordination was predicated on the following hypotheses: An increase in work unit size is associated with: (a) a decrease in use of group co-ordination; (b) an increase in use of personal co-ordination and (c) a significant increase in use of impersonal co-ordination mechanisms.

The results confirmed most of the predictions in that task uncertainty, interdependence and work unit size accounted for

substantial variations in the use of all the co-ordination mechanisms except hierarchy. However, on comparing the relative strengths of the independent variables the authors found task uncertainty to have the greatest potency which gave substance to their earlier prediction based on previous research findings that....

"....if the work undertaken by an organizational unit is analyzable and nonvariable, most of the activities can be standardized and programmed. However, as the task increases in uncertainty, it becomes more difficult to co-ordinate by impersonal means. This can be due to a greater number of exceptional cases arising or to encountering tasks more difficult to analyze. ...In the extreme cases, a high level of uncertainty may require that mutual adjustments be accomplished by group judgements."¹³

By extrapolating from the findings of Van de Ven et al, it is evident that organizations with analyzable task and routine technology will tend to use impersonal coordination modes if they are to achieve a match between work unit level technology and structure. This co-ordination mode tends to prescribe work-related behaviour of employees and therefore limits the opportunities for introducing participation. In contrast, organizations which characteristically encounter unanalyzable tasks and a number of exceptional cases will use non-routine technology, personal and group co-ordination modes which consequently makes it difficult to prescribe employee work-related behaviour. In such organizations, there are structural opportunities to introduce participation.

Marsh and Monnari¹⁴, sought empirically to test the technological implications theory. Broadly, they tested three parts of the theory:

(a) technology has direct causal implications for organization structure; (b) technology has both direct and indirect influences, i.e. technology influences organization structure and the two together, then produce effects on employee attitudes and behaviour and (c) technology has indirect causal influences mediated by given aspects of organization structure on other aspects of organization structure and on employee's perceptions, attitudes and behaviour. From the seven general propositions, thirteen specific hypotheses were derived to test the relationship between technology and organization structure of firms and the joint effects of technology and organizational structure on employee behaviour and attitudes.

Data were collected from three Japanese companies representing the technological categories of small batch production, mass production assembly line, automated continuous process and a fourth which combined aspects of unit and mass production technology. Of relevance to this study was their finding linking technology to such dimensions of organizational structure as centralization of authority and influence and complexity of knowledge needed to perform the organizations task. Knowledge complexity was measured by the proportion of personnel in each firm who were university graduates as opposed to high school or middle school graduates. Centralization of authority and influence on the other hand, was measured by supervisory and managerial perception of the focus of decision-making in the organizational hierarchy.

A specific hypothesis linking the structural dimension of knowledge complexity was stated thus: "knowledge complexity is greater

in firms with continuous process automated technology than in firms with mass output technology"¹⁵. In the case of centralization of authority and influence, it was hypothesized that "Centralization of authority and influence is greater in firms with mass production technology than in firms with continuous process automated technology."¹⁶ Support for these hypotheses was interpreted by the authors as confirming the technological implications theory, notwithstanding the cultural differences between Japan and Britain and the United States where most of the technology-structure studies had been conducted.

The implication of these findings for a discussion of participation is that when knowledge complexity is taken as an indication of task variability and the extent of unanalyzable search behaviour employees engaged in to perform their work role, then organizations with process technology have a higher participative potential than those with mass output technology. This is because, in the latter technological setting, the low degree of task variability and analyzable search behaviour leads to a prescribed task role and since the technology has pre-empted almost all the work-related decisions that could be made by the employee there is a structural constraint to the extent to which participatory forms could be introduced.

Attempts to relate technology not only to organization structure but also to industrial democracy, have been made outside mainstream technological contingency theory, and bear direct relevance to our research focus. A theoretical work by Sorensen¹⁷ aimed to contribute to the conceptualization of the interplay between technology and industrial

democracy. Although the impact of technology on industrial democracy was theoretically demonstrated using sociotechnical theory and the Marxist labour-process approach, the review of Sorensen's work will be limited to his exploration of the impact of sociotechnical theory on industrial democracy.

Sorensen traced the development of sociotechnical theory to the work of the Tavistock Institute whose members promote the idea that the production system involves a combination of social and technological dimensions.¹⁸ The empirical basis of sociotechnical theory is rooted in the works of Trist and Bamforth and then Rice, which culminated in the development of autonomous work groups. He, however, pointed out that it was the work of the Industrial Democracy Programme (IDP) in Norway that provided a basis for constructing a sociotechnical model of the relationship between technology and democratization of firms. The objective of IDP was to develop industrial democracy by enterprise reorganization and the development of semi-autonomous work groups whereby workers could rotate between tasks. Technology was conceptualized as a system of machinery which created tasks with a given frequency of appearance. Sorensen's conceptualization of the sociotechnical model of the impact of technology upon democratization is presented in figure five.

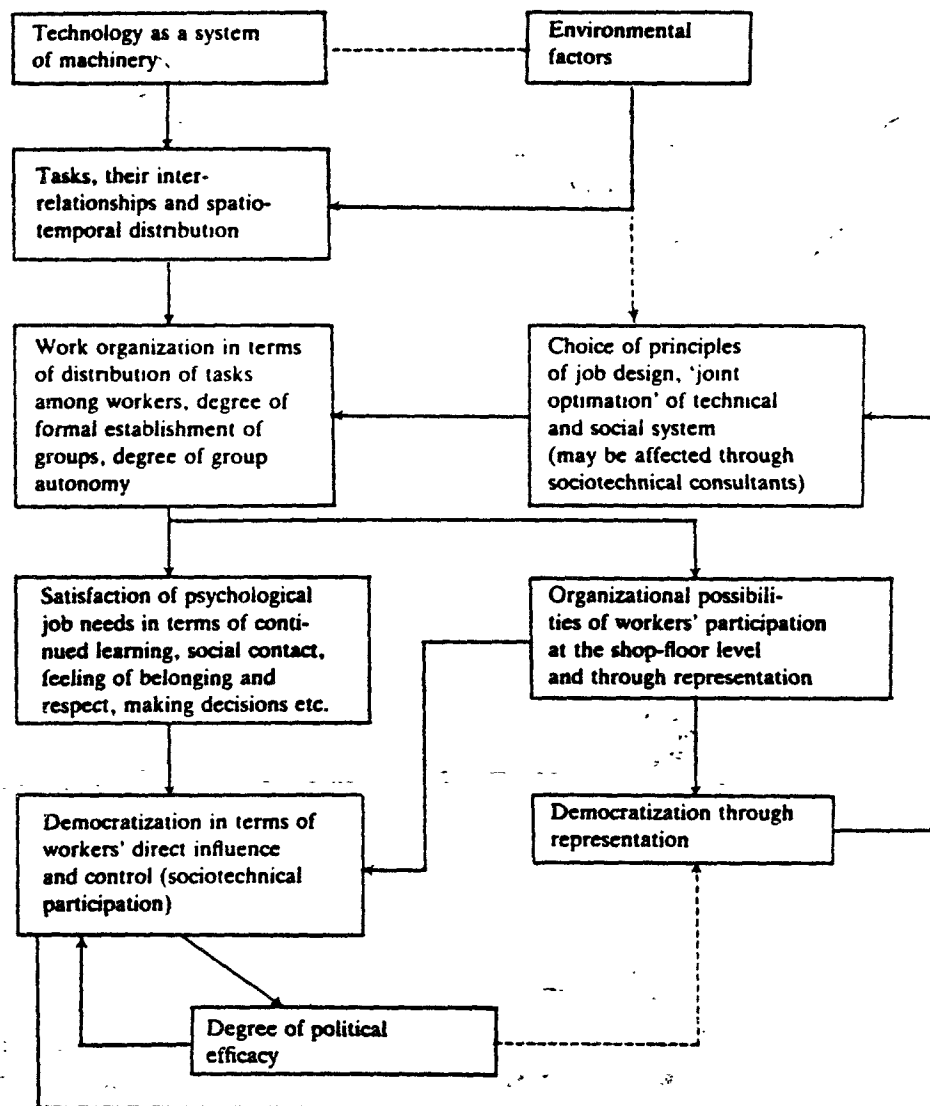


Figure 5: The Sociotechnical Model of the Impact of Technology Upon Democratization

From the figure above, he argues that technology per se has no direct impact but affects democratization by the way tasks limit the possibilities of applying principles of job design. Another characteristic of the model as noted by Sorensen is the assumption that

job design is an optimizing process, in that, sociotechnical theory suggests a search for optima in cases of job content, length of work cycle, interlocking tasks and the boundaries of work group autonomy. A further characteristic is that the impact of sociotechnical theory on industrial democracy is experienced mainly at the shopfloor level and the establishment of formal systems of representation relates only weakly, if at all, to the characteristics of technology. Finally, sociotechnical theory argues that technology limits the possibility of democratic forms of organization. On the strength of these observations evident in the model, Sorensen points out that:

"....while technology may not be the most important factor in explaining sociotechnical participation...these issues cannot fruitfully be described without reference to technology. This should be a sufficient reason to pursue the sociological ghost of technology also in the field of industrial democracy."¹⁹

Although technology has been shown to be an important factor in determining the potential for participation, especially at the shopfloor level, the structural determination literature has shown that technology is not the only variable. In succeeding sections of this chapter, we shall review the literature on the other determinants of structure (such as organization size, environment, strategic choice, organizational autonomy and occupational structure) and show how they are either conditioned by or impinge on technology to determine structure and the implications for the establishment of participation in organizations.

Size as the dominant variable:

The most outstanding advocates of the size-structure tradition are the Aston researchers, whose work has provided the inspiration for the size imperative tradition through a series of articles which have consistently found significant relationships between size and certain dimensions of organization structure. Pugh,²⁰ has noted elsewhere, the three-fold objectives of the Aston project which were: (a) to discover in what ways an organization structures its activities; (b) to see whether or not it is possible to create statistically valid and reliable methods of measuring structural differences between organizations and (c) to examine what constraints the organization's context (i.e. its size, technology of manufacturing, diffusion of ownership, etc.) imposes on the management structure.

In an early study, guided by the above objectives, Pugh, Hickson, Hinings and Turner²¹ defined organizational structure by the following dimensions: (1) structuring of activities; (i) concentration of authority and (ii) line control of workflow. The contextual variables of size and technology were defined as follows: Size, by the log of number of employees and technology by automaticity mode, interdependence of workflow segments, automaticity range, workflow rigidity and specificity of criteria of quality evaluation. Data for the study were collected from fifty-two work organizations, forty-six of which were randomly sampled, stratified by size and product or purpose.

<i>Contextual variables</i>	<i>Structural variables†</i>
Origin and history	<i>Structuring of activities</i>
Ownership and control	Functional specialization
Size	Role specialization
Charter	Standardization (overall)
Technology	Formalization (overall)
Location	<i>Concentration of authority</i>
Resources	Centralization of decision making
Dependence	Autonomy of the organization
<i>Activity variable</i>	Standardization of procedures for selection and advancement
Identification (charter, image)	<i>Line control of workflow</i>
Perpetuation (thoughtways, finance, personnel services)	Subordinate ratio
Workflow (production, distribution)	Formalization of role performance recording
Control (direction, motivation, evaluation, communication)	Percentage of workflow superordinates
Homeostasis (fusion, leadership, problem solving, legitimization)	<i>Relative size of supportive component</i>
	Percentage of clerks
	Percentage of nonworkflow personnel
	Vertical span (height)
	<i>Performance variables</i>
	Efficiency (profitability, productivity, market standing)
	Adaptability
	Morale

* Bakke (1959).

† Pugh *et al.* (1968).

Figure 6: The Aston Conceptual Scheme for Empirical Study
of Work Organizations

The general findings of the authors which overwhelmingly support the size imperative were (a) That size causes structuring of activities through its effect on intervening variables such as frequency of decisions and social control; (b) Dependence causes concentration of authority at the apex of publicly owned organizations because of pressure for public accountability requiring the approval of a central committee for many decisions and (c) Integrated technology may be hypothesized to cause an organization to move towards the impersonal

control end of the line control.

Continuing the Aston tradition, Hickson, Pugh and Pheysey²² undertook research to test the proposition of the technological imperative school at the organizational level of analysis. Data were collected from fifty-two diverse manufacturing organizations with a minimum of 250 employees in Birmingham, England. The impact of technology, defined as workflow integration of such structural dimensions as structuring of activities, concentration of authority and line control of the workflow was investigated. Hickson et al. were unable to provide support for the high bivariate relations between technology and structure found by Woodward. Their findings, however, showed moderate relationship, especially with workflow integration. The other structural variables, on the other hand, showed no relationship or disappeared when size of the organization was held constant and therefore attributed the effects of technology found in the Woodward study to differences in size of the firms in the two studies - a minimum of 100 employees in Woodward's as opposed to 250 in Hickson et al's. They therefore postulated that:

"Structural variables will be associated with operations technology only where they are centred on the workflow. The smaller the organization, the more its structure will be pervaded by such technological effects: the larger the organization, the more these effects will be confined to variables such as job counts of employees, on activities linked with the workflow itself and will not be detectable in variables of the remote administrative and hierarchical structure.²³"

The Aston researchers, in both the original and Birmingham studies, found a positive relationship between organizational size and such structural dimensions as specialization, standardization, formalization and centralization of decision-making. Increases in organizational size is normally accompanied by specialization and differentiation around functional areas or specialties. This therefore creates co-ordination problems which are resolved through the adoption of such structural features as formalization of rules and procedures and impersonal control mechanisms. Thus the bigger the organization the more accentuated are the elements of bureaucracy. The implication of their finding for a discussion of participation is that in large bureaucratized organizations the features that help such organizations cope with problems of size act as constraint on participation. In small organizations, presumably because of the relatively 'undeveloped' bureaucratic features and the personalized co-ordination modes there are structural opportunities to adopt new forms of work relationships.

Child,²⁴ investigated the relationship between size and organizational structure by addressing two main problems: (a) how critical is size as a predictor if not a determinant of organization structure and (b) whether complexity is important for predicting the form of organization and if so how is it associated with size and other contextual variables. His investigation of these problems was based on the model below.

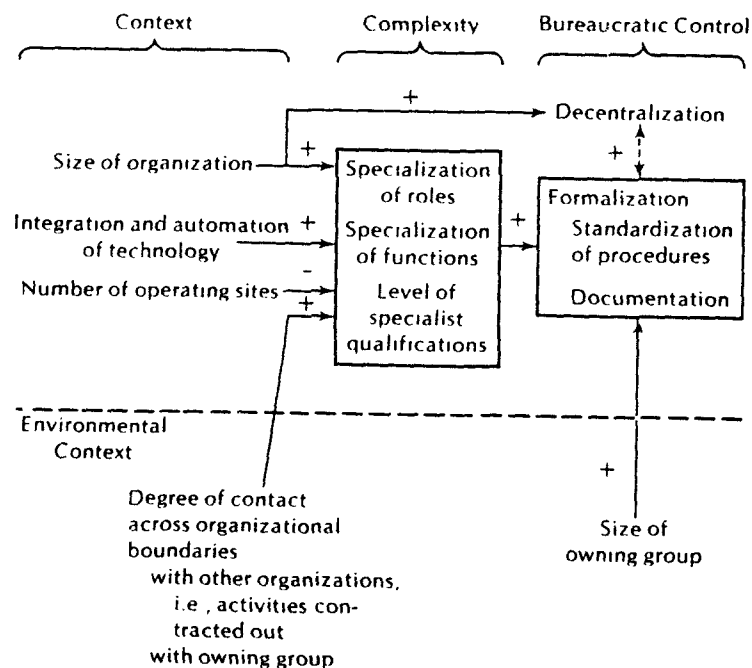


FIGURE 7 Child's Model of Relationships Between Contextual Variables and Organizational Structure

Data for the study were collected from organizations drawn from the industrial areas of England and Scotland called The National Sample and from the Aston sample. Organization structure was defined by degree of complexity and strategy of control. He found that complexity defined as role and functional differentiation and the range of specialized expertise mediates the relationship between bureaucratic control mechanisms of decentralization and formalization. Furthermore, in regard to bureaucratic control, he found formalization to be dependent on the level of complexity whereas decentralization had a direct relationship with larger size rather than complexity. A comparison of

his findings with those of the Aston studies and that of Blau and Schoenherr confirmed that, "larger organizations are more specialized, have more rules, more documentation, more extended hierarchies and a greater decentralization of decision-making further down such hierarchies."²⁵

Child's finding that degree of formalization is an indirect function of size (size determines complexity) and that decentralization is dependent on size has implications for a discussion of participation. This is because, the extent to which bureaucratic controls are employed by an organization depends on its size. Large organizations with highly developed bureaucratic controls also have a well established status system which defines the appropriate relationship between superiors and subordinates. New forms of work relationship between superiors and subordinates inherent in participation will constrain participation to the extent that both parties perceive it as being legitimate. In small organizations on the other hand, use of personal rather than impersonal bureaucratic control mechanisms implies an informal relationship between subordinates and superiors which allows for defacto participation. Such a structural condition does not only provide lots of opportunities when the organization formally introduces participation but the new work relationship is also perceived as being legitimate.

Dewar and Hage,²⁶ designed a study to investigate the relative impact of size and technology on structural differentiation (vertical and horizontal) and complexity. Data for the study were provided by a previous research conducted by Aiken and Hage in which they collected

data in three waves on each of the sixteen social service organizations in 1964, 1967 and 1970. In the view of Dewar and Hage, longitudinal data provide a much more solid basis for inferring the causal priority of the contextual variables of size and technology.

Size was measured by the number of full-time personnel, half the number of part-time personnel and a tenth of the number of volunteers. Technology was measured on the basis of task scope and variability. The authors found that when data were cross-sectionally examined, size and task scope appeared to have the same impact. However, when the relationship was examined over time, task scope emerged as a more consistent predictor. Size was found to be a more consistent predictor of vertical differentiation examined cross-sectionally or longitudinally. Furthermore, it was found that size was more important in predicting horizontal differentiation than task scope. In effect, the authors found that size is a determinant of structural complexity.

The implication of this finding for a discussion of participation is that in large organizations, characterised by a high degree of structural complexity, there is a tendency to resort to bureaucratic control mechanisms such as formalization, especially along the vertical dimension of differentiation. In such large bureaucratic organizations, there is a formalized relationship between superiors and subordinates and therefore the introduction of participation with a consequent redefinition of superior-subordinate relationship inherent in participation will be constrained by the extent to which this new relationship is perceived as legitimate. In small organizations on the

other hand, a low degree of structural complexity precludes the need for bureaucratic control mechanisms. Relationship between superiors and subordinates is characterised by informality and this provides a structural opportunity for the introduction of participation since new forms of work relationship between superiors and subordinates engendered by participation will be perceived as legitimate.

A theoretical paper by Astley²⁷ investigated patterns in the evolutionary development of bureaucratic organizations by examining the extent to which variations in organizational size were associated with variations in selected structural dimensions. His work was inspired by the belief that few studies of bureaucratic structure have related their findings to organizational size, a variable discovered by Weber to be the main determinant of bureaucratization. To rectify this shortcoming, Astley integrated the interrelationship between the structural variables of workflow interdependence, hierarchical shape, administrative intensity and mechanisms of control and their joint relationship with organization size into an evolutionary model of bureaucratization. The model is shown in the figure below.

Stages of Growth				
Dimensions of Structure	Work-flow Interdependence	I	II	III
	Hierarchical Shape	reciprocal	sequential	pooled
	Administrative Intensity	tall	squat	flat
	Mechanisms of Control	increasing simple	decreasing technical	decreasing bureaucratic

Figure 8: Astley's evolutionary model of bureaucratization

He divided the stages of organizational growth into three phases, each with a different structural configuration, corresponding to Weber's ideal type. Stage I organizations were depicted as placing heavy reliance on ad hoc mutual adjustments as a basic mechanism for coordinating work. Furthermore, such organizations derived considerable autonomy over everyday operating decisions as a result of the system of direct personal supervision inherent in simple control mechanisms. Such organizations were held to be consistently organic in all structural dimensions. Stage II organizations were depicted as being characterized by functional departmentalization deriving from its sequential workflow interdependence. Such organizations were also said to be distinct in their tendency to homogenize, simplify and standardize tasks. These features relieved the manager of supervisory duties as technical control is built into the machinery and standard operating procedures removes

most subordinate discretion while non-routine exceptions are passed up the hierarchy. Astley postulated that because such organizations tended to be centralized and standardized they represent bureaucracy in Weberian terms. Stage III organizations were characterised as having self-contained units and a good deal of decision-making responsibility delegated to the apex of each self-contained division. This notwithstanding, overall control remains centralized and functions through reliance on rules and regulations which by and large, circumscribe subordinate discretion. In Astley's view, decision-making in such organizations is shaped by an impersonalized matrix of remote bureaucratic control.

The implication of Astley's theoretical model for a discussion of participation is that, in small organizations (Stage I) the system of direct personal supervision implies informality of relations between supervisors and subordinates which does not only provide subordinates autonomy over work related decisions but also facilitates the introduction of participation. This is because the informal relationship involved in participation will be perceived as legitimate. In large organizations (Stage III) on the other hand, superior-subordinate relationships are very formalized because of the impersonal control. In such circumstances the introduction of participation can be constrained by the extent to which both parties perceive it (new informal relationship) as being legitimate.

Environment as the dominant variable

The passage from a closed to an open system view of organizational analysis has drawn increasing attention to the role of environmental variables in the determination of organization structure. Miles, Snow and Pfeffer²⁸ have pointed out that structure-environment studies have been concerned with the following questions: (a) to what extent are organizations shaped by their environment, that is, by the network of individuals, groups, agencies and organizations with whom they interact and (b) are there organizational characteristics-strategies, technologies, structures and processes which are appropriate for one environment but which may lead to failure in another? For the past two and half decades a copious literature has emerged focused on these problems, a handful of which are reviewed here.

Emery and Trist,²⁹ developed a typology of environments based on the degree of interconnectedness and the extent of change in the environment using the concept of causal texture. They contend that although the open system perspective throws light on the active interchange between an organization and its environment, it fails to address processes in the organization's environment which determine the conditions of exchange. They subsequently developed a notation system to explicate the degree of interconnectedness between the organization and its environment. In this system, L indicates a potentially lawful connection; the suffice 1 refers to organization and 2 to environment. L_{11} refers to area of internal (organizational) interdependencies, L_{12} and L_{21} to exchanges between the organization and its environment; L_{22}

the area of interdependencies that belong within the environment.

They used a case history of a food canning company to illustrate how changes in the causal texture of the company's environment in this case, a rapid increase in the firm's area of relevant uncertainty, prompted a redefinition of the firm's mission. Based on this case history, they postulated that, organization environments differed in their causal texture with regards to degree of uncertainty. Emery and Trist therefore described four types of causal texture: (a) Placid-randomized-in this type of environment there is no difference between tactics and strategy and organizations can exist adequately as single and small units; (b) Placid-clustered-in this type of environment there is need for strategy and the organization grows in size becoming multiple and tending towards centralized control and co-ordination; (c) Disturbed-reactive-instead of strategy and tactics, the organization needs to define its objectives clearly to meet competitive challenges and control becomes more decentralized and (d) Turbulent fields-organizations are characterized by increasing reliance on research and development to meet competitive challenges, deepening interdependence, between economic and other societal factors which results in increased uncertainty. They postulated that for such an environment, the appropriate organizational form should be a matrix structure in order to reduce or cope with degree of turbulence.

The implication of their work for a discussion of participation is that organizations operating in non-turbulent environments such as described by placid-randomized and placid-clustered, information

gathering and processing needs for decisions would be minimal hence such organizations would be characterised by routine decisions. Co-ordination and control then would be achieved by the imposition of rules and procedures through standardization and formalization hence a mechanistic structure. The low degree of uncertainty would constrain the extent to which participation can be introduced since organizational problems are well known and there is therefore no need to seek solutions to new problems from other sources. However, organizations operating in disturbed-reactive and turbulent fields have high information demands and processing needs for decisions would be at their maximum. Standardization and formalization would be at a minimum since every new situation would be so different that previous routines and procedures would be inapplicable, hence an organic structure. Under such conditions of high perceived uncertainty, there is a structural opportunity to introduce participation because the novelty of every situation calls for a variety of new approaches to solving organizational problems.

One of the early researches to support the view that organizations must adapt to their environment if they are to improve their effectiveness was undertaken by Burns and Stalker.³⁰ In a study of fifteen firms, they sought to describe and explain what happens when new and relatively unfamiliar tasks are put upon industrial concerns which have been organized for stable conditions. Environment was defined by the rates of change in technical and market conditions, whilst the dependent variable was defined by the system of management.

They found that the extent of change in the environment of the firms studied not only had an effect on the management system but also their economic performance. Specifically, it was found that successful firms in the electronics industry were those that have modified their systems of management in tune with the rate of change in the environment whilst the unsuccessful firms were those that continued with their traditional system of management (highly structured) inspite of changes in the external environment. On the basis of their findings, the authors pointed out that:

"There seemed to be two divergent systems of management practice.... One system, to which we gave the name 'mechanistic' appeared to be appropriate to an enterprise operating under relatively stable conditions. The other 'organic' appeared to be required for conditions of change."³¹

Mechanistic organizations were described as having clearly defined roles and responsibilities, and co-ordination and control were achieved by an elaborate mix of rules, standard operating procedures and policies which tend to be supplemented by a formal authority structure whenever exceptional circumstances were encountered. Organic organizations, on the other hand, were described as having loosely defined roles and responsibilities, there was absence of clearly formulated procedures and communication between employees of different ranks took the form of lateral consultation rather than vertical command. The implication of this finding for participation is that in mechanistic organizations, the routinized nature of procedures means

that problems and solutions are well known and in such a situation, conditions of stability in the organization's environment will constrain the introduction of participation. However, in situations of uncertainty, the characteristics of the mechanistic organization will be inadequate to handle the operational problems of the organization. The organizational response to such problems, as exemplified by organic structures, would, therefore provide structural opportunities for the introduction of participation which will encourage a search for solutions to organizational problems from all levels in the organizational hierarchy.

A study by Tung³² sought to: (a) develop a comprehensive typology for interpreting and analyzing organizational environments; (b) empirically test the validity of the model; and (c) examine the relationship between characteristics of the environment (complexity, change rate and routineness of problem/opportunity states), perceived environmental uncertainty and organizational variables. Data were collected from 64 organizational units of 21 different companies engaged in 9 different types of business/industrial activities located in Vancouver, Canada. Other dependent variables were; (a) time perspective taken in planning and (b) frequency of modifications to policies and programs over their life span. She investigated variation in departmental structure, time perspective taken in planning and frequency of changes to plans across the eight cells in the figure below.

	Low Complexity		High Complexity	
	Routineness	Nonroutineness	Routineness	Nonroutineness
Low Change Rate	1 n = 21 U = 4.28 S = 4.42 T = 4.26 C = 1.24	2 n = 6 U = 4.16 S = 4.05 T = 4.08 C = 1.58	3 n = 5 U = 3.78 S = 3.50 T = 3.50 C = 2.00	4 n = 2 U = 3.33 S = 2.78 T = 2.00 C = 2.00
	5 n = 12 U = 3.36 S = 3.80 T = 2.41 C = 2.94	6 n = 3 U = 3.41 S = 3.33 T = 3.66 C = 2.93	7 n = 10 U = 2.35 S = 2.64 T = 3.25 C = 3.86	8 n = 5 U = 1.85 S = 2.30 T = 3.00 C = 4.20

*n = number of cases in the cell; U = Uncertainty. A low score indicates high uncertainty. A high score indicates high certainty; S = Structure. A high score indicates mechanistic structure. A low score indicates organic structure; T = Time perspective taken in planning. A high score indicates long range planning perspectives; C = Frequency of changes to plans. A high score indicates frequent changes.

Figure 9: Tung's typology of organizational environments

She put forward four hypotheses to explore these relationships,

viz:

- (a) A chief executive officer operating in an organizational unit located in a cell 1 type environment most likely would adopt a mechanistic structure and would engage in long range planning but make few modifications to plans along the way;
- (b) A chief executive officer operating in an organizational unit located in a cell 4 type environment most likely would adopt a more flexible structure and would engage in long range planning with few modifications to plans;
- (c) A chief executive officer operating in an organizational unit located in a cell 5 type environment most likely would adopt a more mechanistic structure and would engage in short range planning with more modification to plan and;

- (d) A chief executive officer operating in an organizational unit located in a cell 8 type environment most likely would adopt an organic structure and would engage in short range planning with frequent modifications as changes intrude upon plan.

Tung found that perceived environmental uncertainty and the three organizational variables studied varied significantly across all eight cells ($p \leq .005$) and in the predicted direction. Furthermore, she found that change rate has single greatest effect on variation in perceived environmental uncertainty and that departmental structures, time perspective taken in planning and frequency of changes to plans do vary among departments located in different environments.

Of relevance to a discussion of participation is her finding that organizations in environments with high change rates and high non-routineness have organic structure, as opposed to organizations in environments with low change rates and high routineness which have mechanistic structures. The high degree of uncertainty in some environments makes it impossible or difficult to stick to a game plan and for that reason, there will be a tendency to seek solutions to problems from all levels of the organization. This then provides a structural opportunity for adoption of participation. Organizations in environments with a low degree of uncertainty, because of the low change rate, will have few exceptional situations which would be handled by the organization's leadership whilst the bulk of the routine problems are handled by formalized and standardized procedures. Such organizations provide a structural constraint for adoption of participation since there is no pressure to seek knowledge or solutions from other sources

because the problems and solutions are well known.

Previous studies of environment-structure relationships have almost all employed the concept of environmental task uncertainty. However, Aldrich & Mindlin³³ have pointed out that organizational environment could also be defined by the degree of dependence on outside agencies. Wheeler, Mansfield and Todd³⁴ investigated empirically the impact of dependence on selected structural correlates using data collected from seventy-eight industrial and commercial companies operating in the United Kingdom. Dependence, the independent variable, was defined by (a) dependence upon an owning group and (b) customer dependence. Customer dependence was further divided into (i) dependence to a greater or lesser extent upon a particular customer(s) especially when this customer(s) buys a great deal of the company's outputs measured by percentage of all products sold to the largest customer and (ii) dependence upon 'impersonal' market forces measured by the company's market share for its main product line and for its total product range. Structural measures used included extent of centralization of decision-making, number of levels of structural differentiation, extent of functional specialization in the company, structural differentiation between product, sales, marketing and product development and, lastly, integrative mechanisms.

Wheeler, Mansfield and Todd found support for their propositions that (a) customer dependence in high dependent organizations will lead to high levels of functional differentiation, non-lineal methods of functional integration and centralization. This is because dependence

creates pressures for senior executives to exercise control and (b) functional differentiation, non-linear methods of functional integration and specialization will be negatively related to dependence on impersonal market forces. The authors explained the latter finding thus:

"....organizations in dependent situations limit their operation in an attempt to most efficiently supply the part of the market which they can penetrate by economizing on the employment of specialists and minimizing the associated bureaucracy. The lack of functional dependence found in companies dependent on the market may also reflect attempts to create internal economies by minimizing specialization and getting persons to cover more than one role."³⁵

By extrapolation, Wheeler et al.'s finding indicates that companies which are highly dependent on customers tend to use mechanistic structures whereas those dependent on impersonal market forces have organic structures. The relevance of this to a discussion of participation is that in the former situation there is no pressure to seek solutions to problems from non-traditional sources and roles tend to be clearly defined. Such a structure constrains the extent to which participation could be introduced. In the latter situation, because of the impersonal nature of market forces and, supposedly, a high degree of uncertainty, there is pressure to seek solutions to problems from all points in the organizational hierarchy and roles tend to be loosely defined. Such an organizational structure, because of the high degree

of uncertainty, provide structural opportunities for the adoption of participation.

Strategic choice as the dominant variable

The literature on the structural contingency framework reviewed in the preceding sections depicts structural determination as an essentially mechanical adaptation to various contextual variables. However, for sometime now the framework has been revised to include managerial discretion or strategic choice to highlight the process by which contextual variables are translated into structure. Strategic choice is therefore considered a co-determinant of structure.

Although Chandler formulated the concept of strategic choice, it was Child,³⁶ who argued for the incorporation of the concept into the structural contingency framework. He used the term 'dominant coalition' originally formulated by Cyert and March and used by Thompson, to refer to those who normally have the power to take the initiative in the design of organizational structure. In a theoretical work, he argued for a reconceptualization of contingencies and external constraints to ensure a recognition of the processes which influence the design of organizational structure and its adjustment to the environment. This follows from his contention that there are some degrees of freedom to the extent that the dominant coalition can manoeuvre with respect not only to contextual factors but standards of performance and structural design which implies some degree of choice. He identified certain situations which could promote structural choice on the part of the

dominant coalition: (a) if the dominant coalition recognizes structure as possessing performance implications they may prefer to satisfice; (b) the nature of contextual constraints could pose conflicting implications for structural design which necessarily implies some degree of structural choice. Following from these, Child contends that organization decision-makers have some leeway in their choice of structural configuration and summarized his argument thus:

"We have argued that the analysis of organization and environment must recognize the exercise of choice by organizational decision-makers....The critical link lies in the decision-makers evaluation of the organization's position in the environment areas they regard as important and in action they may consequently take about its internal structure."³⁷

The relevance of Child's work to a discussion of participation is that it highlights the point that opportunities and constraints provided by the previously discussed contextual variables are not deterministic. Organizational decision-makers who wish to introduce participation can exploit whatever opportunities exist within their organizational contexts to design a form of participation in tune with their structural preferences.

Montanari²⁸ proposed an expanded model of organizational choice in which he empirically investigated three aspects of contingency theory different from previous studies: (a) Does managerial discretion influence the structural determination process? (b) Does technology moderate rather than directly determine some dimensions of organization structures? and (c) Is the type and/or mix of determinants of structure

contingent on the decision being analyzed? Data were collected from 97 major United States and Canadian firms, in diverse industries with the functional work unit as the level of analysis. Structural dimensions used in the study included formalization, autonomy, vertical span, delegation of authority and specialization and the contextual variables were size, technology and environmental uncertainty. Managerial discretion was operationalized as the decision-makers predisposition to solve organizational problems by implementing structural modification and strategic choice as the manager's inclination to implement structural changes within the range defined by the contextual variables of size, technology and environmental uncertainty.

Montanari found that although the relationship between structural dimensions and contextual variables was confirmed for 26 significant relationships ($p > 0.05$ and $p > 0.10$) 12 involved managerial discretion and structure relationships "which provides empirical justification for further investigation of the impact of managerial discretion on the structural determination process."³⁹ The implication of this finding is two-fold: first, it gives empirical credence to the theoretical argument that strategic choice should be included in the structural determination process and secondly, following from the above, its relevance to a discussion of participation is that it emphasizes the point that structural variables alone do not determine whether participation is possible or not. The structural preference of management could exploit whatever participation potential has been

provided by the contextual variables to shape the eventual form of participation.

Bobbitt and Ford⁴⁰ reviewed conceptual theoretical issues surrounding the structural contingency framework and contended that the ability of contextual variables to determine organization structure depends largely on which variable decision-makers consider as being salient. They postulated that, if structure is treated as a function of managerial choice, it then becomes possible to see structure as a result of a determinable decision-making process or, alternatively, as a decision problem. Following this line of reasoning, they pointed out that differences in organizational design choice require an understanding of the cognitive and motivational orientation of decision-makers because they influence what decision-makers do and why.

Organization structure according to their model, is a result of the interaction of the decision-makers cognitive and motivational orientations, transformation strategies and contextual variables. Bobbitt and Ford, therefore put forward two propositions to explain the role of decision-makers' choice in the structural determination process: (a) structures chosen by organizational decision-makers may have limited relationship with contextual factors and (b) organization decision-makers attempt to create structures that are consistent with their cognitive and motivational orientations.

The implication of their theoretical work for a discussion of participatory forms is that contextual variables per se do not determine the form of participation. At best, they provide structural

opportunities or constraints within which the structural preference of organizational decision-makers operate to design the form of participation.

Randolph and Dess⁴¹ proposed a congruence perspective in a theoretical paper on the design of organizations. In a review of the organization design literature, the authors observed a paucity of empirical studies that have attempted to integrate environment, technology and structure in a multivariate model of organization design and performance. In response to this, the authors proposed a theoretical model of strategic choice to serve as an integrating framework. The heart of the model is the assumption that organization design is largely the outcome of a process of strategic choices made by key organization members in choosing the design variables.

The model addressed three problems derived from the work of Miles et al - entrepreneurial, engineering and administrative. Entrepreneurial problem was defined by the choice of product or service to be provided by which managers determined the relevant external environment of the organization. The choice of product market determined the level of task uncertainty and therefore the engineering problem which must be solved by choice of technology. Choice of technology however, does not resolve all the uncertainty and therefore the administrative problem consists of decisions about dimensions of organizational structure. In conclusion, the authors underlined the objective of the model thus:

"...this model proposes that the congruence between environment and technology and the congruence between

technology and structure is important. This matching process relates to the strategic choices of technology and structure, and those choices are contingent on the strategic choice of product market which determines the environment."²

The relevance of their discussion to a discussion of participatory forms is that when strategic choice decisions are perceived as being either proactive or reactive it is possible for organization decision-makers to make decisions about organizational structure. This is evident not only at the initial design phase (proactive) but during subsequent transformation of structure (reactive). In the latter case, the contextual variables provide some degree of freedom within which the organization decision-makers can implement their structural preference.

Organizational Autonomy (Status of Management) as the dominant variable

Following from the preceding discussion, conventional wisdom in the structural contingency framework holds that the contextual variables provide either structural constraints or opportunities and the resulting structure is shaped by the structural preference of the organizational decision-makers. However, the extent to which these decision-makers can implement their structural preferences is determined by the amount of power they perceive themselves to have which in turn is a function of the autonomy of the organization.

Warner and Peccei³ investigated the extent of participation in subsidiaries of a multi-national corporation with the contention that the tendency towards centralization in multi-national corporations would constrain not only the extent to which participatory structures are

introduced but their content, as well. Data were collected in the United Kingdom and Western European divisions of a large diversified British based multi-national corporation. Autonomy was measured by (a) the degree to which headquarters is involved in policy-making; (b) the degree of influence which subsidiary management has at the local level and (c) degree of effective control it has in handling industrial relations and related issues. Centralization-decentralization was measured in terms of 18 specific industrial relation activities or decision areas. Furthermore, they distinguished between two dimensions of decentralization-policy and de facto. Policy decentralization referred to the extent to which local management and head office were involved in the formulation of industrial relation policies and guidelines whilst de facto decentralization referred to the degree of influence which local management had over industrial relation matters at plant level.

The authors found that certain decisional areas are explicitly centralized, for example, finance and appointment of senior personnel. Furthermore, even those decisional areas which appear to be decentralized, the head office seemed to have latent degree of control. They therefore concluded thus:

Overall, we can suggest that there may be an inverse relationship between the level of centralization and that of effective worker participation at the periphery....we are forced to conclude that greater decentralization and substructural autonomy appear to be pre-conditions for an extension of workers-participation in multi-plant firms.""

The implication of this finding for a discussion of participation is that the extent to which organizational decision-makers can exploit the structural opportunities and constraints present in their organizations to implement a participatory structure attuned to their structural preference is dependent on the degree of autonomy the organization might have from shareholders or the head office of the multi-national corporation.

Geeraerts,⁴⁵ investigated the nature of the relationship between size and organizational structure using status of management as an intervening variable. Data for the study were collected from small and medium-sized business firms in the Netherlands from professional management consultants related to 84 Dutch firms. Size was measured by the number of full-time employees plus half the number of part-time employees, while structural variables were measured using the Aston measures. Status of management was measured by the proportion of shares held by the manager and directors. Those who held at least 5 percent shares were classified as owner-managers and those with less than 5 percent as professional managers.

Geeraerts reported that all correlations between size and the structural dimensions of formalization, horizontal differentiation, decentralization, specialization were positive. He also found that on the average, firms of a given size tended to be more horizontally differentiated, more formalized and had higher internal specialization when controlled by professional managers than owners. On the strength of this finding he asserted that:

"...the analysis shows that the composition of a sample in terms of the number of professional managers or owner-managers in the sample will influence the statistical relationship between organizational determinants and structure and the structural qualities of the organizations in the sample."⁴⁶

The relevance of his finding to our research problem is that it highlights the role of organizational autonomy (status of management) in the structural determination process and therefore the ability of organizational decision-makers to implement structures in tune with their structural preference.

Brooke⁴⁷ discussed the relationship between organizational democracy and the multi-national corporation. He put forward the general proposition that powerful commercial pressures to centralization make the multi-national firm very unlikely to implement participation. The sources of the pressures toward centralization are two-fold. First, the superior knowledge, price of new technology, new products and conflict of interest between subsidiaries and the centre create pressures towards centralization. Secondly, most host governments, in the interest of national well-being, dislike the idea of companies and whole economies being controlled from outside and that has therefore created a delicate relationship between multi-national corporations and host governments. The multi-national corporation's response to such a political situation has been to reduce the discretion of local management hence further centralization.

Although there have been few attempts to introduce participation in some subsidiaries he noted they are normally responses to crises

situations and therefore involve limited attempts at innovation. In conclusion Brooke asserts that:

The broadest view of democracy combined with the widest possible definition of multi-national produces little evidence that the former is anywhere applied to the latter. On the contrary much evidence points to powerful forces making the multi-national business soil less fertile towards any form of cross-frontier participation in policy-making.⁴⁸

The implication of Brooke's finding to our research problem is that centralization of decision-making which curtails the autonomy of subsidiaries is a constraint on the extent to which organizational decision-makers in subsidiaries can implement participatory structures attuned to their structural preference.

Occupational Structure as the dominant variable

The impact of occupational structure or skill levels on organizational structure is increasingly being researched, especially with the employment of professionals in bureaucratic settings. In this section we intend to review briefly, two articles to highlight the relationship between skill level and organizational structure.

Meyer⁴⁹ investigated the changes made in the formal structure of organizations in order to solve difficulties caused by specialization and expertness. Data for the study were collected from 254 city, county and state departments primarily responsible for financial administration. For each department, Meyer obtained two sets of data. For the first set, he collected data from divisions in which more than one

quarter of employees held positions for which a college degree was desirable and for the second set, data were collected from divisions where one-quarter or fewer employees had jobs for which a degree was expected (low proportion of experts). Using matched t-tests of statistical significance for 211 departments, Meyer found that differences between expert and non-expert divisions were all statistically significant (all below 0.01 level). Generally, he found that the span of control of first-line supervisors sharply decreases as the level of expertness in an organization's hierarchy increases. He interpreted this finding to mean that expertness in organizations enhances consultation and two-way communication between hierarchical levels with little direction and control from above.

The relevance of Meyer's work to our research problem is that in organizations performing tasks that require high skill levels, employees experience self-direction in their work as opposed to those performing routine tasks and therefore have low skill levels. The nature of skill levels present in an organization provides a structural constraint or opportunity to the extent that employees can handle the increased task role inherent in participation.

Blau investigated the extent to which variations in the qualifications of personnel might affect authority structure in formal organizations. He proposed that: "expert requirements decrease the ratio of managerial to non-supervisory personnel in organizations which widens the average span of control"⁵¹ His hypothesis was tested in 156 public personnel agencies. Expertness was measured by the presence of

operating staff excluding managerial and clerical personnel required to have a college degree with a specified job-related major. Hierarchy of authority was obtained from organizational charts based on the ratio of managers to non-supervisory officials. Blau's hypothesis relating expertness of staff to span of supervisory control and ratio of managers was negated. On the basis of the empirical data, Blau reconceptualized his formulations and conjectured that:

Managerial authority over decision-making appears to be more decentralized in organizations with large proportions of trained experts.⁵²

The confirmation of this conjecture prompted Blau to assert that there are two types of authority structures, a tall slim bureaucracy with decentralized authority and a bureaucratic organization with centralized authority.

The implications of Blau's finding for a discussion of participation is that organizations with a large proportion of experts tend to have organic structures with little role definition and a great deal of autonomy in their task roles. This therefore provides a structural opportunity for introduction of participation since employees can readily handle the increased task roles inherent in participation. On the other hand, organizations with a small proportion of experts tend to have mechanistic structures with precise role definition and little autonomy in task roles. In such circumstances, the introduction of participation may be constrained by the extent to which employees can handle increased task roles inherent in participation.

In the next section we discuss the explanatory framework.

Explanatory Framework

The framework used to explain why the two companies have different participatory schemes is presented in Figure 10. This framework is a synthesis of the extant literature on the structural contingency framework which depicts the form and content of participation as the outcome of the interaction between the contextual variables (size, nature of product and technology, environment and occupational structure), status of management and strategic choice. Unlike earlier contingency researches, these variables are treated as independent co-predictors of the form and content of participation and none therefore enjoys an imperative status. In spite of the arrows indicating causal relations in the figure, this study is only concerned to explore the extent to which these variables influenced the form and content of participation and subsequent outcome variables such as job satisfaction, job involvement and organizational commitment.

Size Argument

As a contextual variable, size enjoys an influential status in the structural contingency literature and has a long tradition dating as far back as Weber's formulation of the bureaucratic model. In his discussion of the influence of size on organizational structure, Child⁵³ isolates two main causal processes. He points out that, as an organization increases in size, it experiences increasing specialization which is structurally expressed in greater differentiation. This greater differentiation among the subunits of the organization increases the

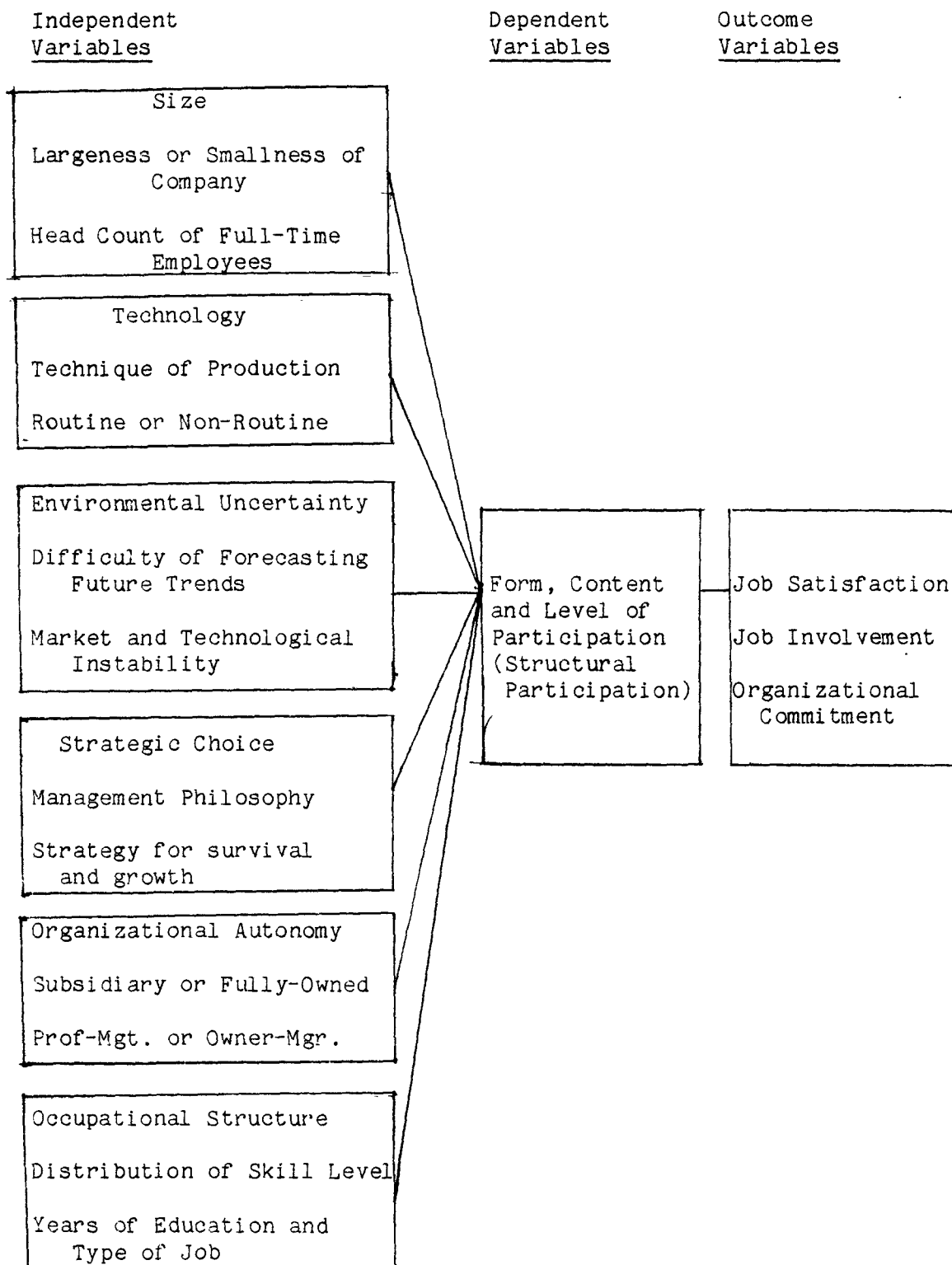


Figure 10: A Model of the Explanatory Framework and Interaction with Dependent and Outcome Variables.

complexity of the organization thereby, creating control or co-ordination problems. These problems are structurally resolved with the development of an impersonal control system. He also points out that large organizations make it difficult to use a personalized, centralized system of management and therefore a more decentralized system characterised by impersonal mechanisms of control tends to be used, such as formalized and standardized rules. Thus, the kernel of the size argument is that increasing size leads to a bureaucratic organization in order to facilitate the achievement of predictability and uniformity. Following this line of reasoning, it is intuitively plausible to assert that size can influence the form and content of participation adopted by any organization. In relating size to participation, Hebden and Shaw,⁵⁴ pointed out that defacto participation occurs in small organizations without any conscious planning whereas the opposite is true of large organizations. In a theoretical examination of the impact of size on the form and content of participation, Koch and Fox, pointed out that the classical elements of organizational design which facilitate efficiency also have a debilitating consequence for participation in work organizations. They postulated that:

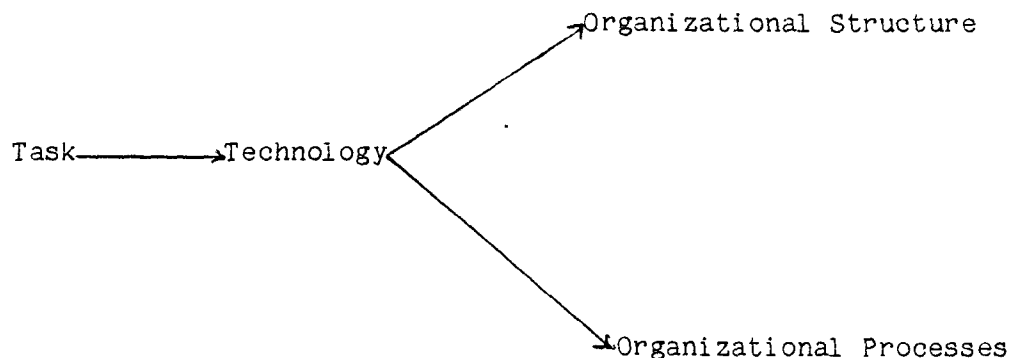
Large, centralized organizations limit the potential for direct participation in technical, managerial and institutional decision processes and increase employee interest in seeking representational participation through trade union.⁵⁵

In the preceding chapter, it was indicated that size can influence the form of participation in that large centralized

organizations with impersonal bureaucratic control mechanisms also have a well developed status system which defines the relationship between superiors and subordinates. The introduction of participatory forms will be constrained to the extent that the new relationship between superiors and subordinates inherent in participatory forms is perceived as being legitimate. Thus there is both theoretical and empirical justification for the inclusion of size in any framework for the explication of the form and content of participation.

Technology Argument

The impact of technology factors in the determination of organizational structure have received tremendous support in the literature as exemplified by Woodward's empirical studies of operations technology of manufacturing organizations and by Perrow, in his conceptualization of materials technology. Although, the exact nature of the relationship between technology and dimensions of organizational structure is not clear, the core of the argument of the technological imperative school can be presented as follows:



Generally, the argument of technological imperative theorists is that the nature of product and the corresponding technology employed by any particular organization has implications for the design of organizational structure. It is proposed that such dimensions of organizational structure as control system, centralization and formalization are all dependent on the type of technology employed. For example, Woodward,⁵⁶ whose work is emblematic of this tradition, found that unit and process production technologies have an organic style of management and a smaller span of control compared to batch and mass production technologies where the style of management is mechanistic and the span of control higher. Not only did Woodward and other technological imperative theorists find a relationship between technology and structure, but they also found that there is a specific form of organization most appropriate to each technical situation.

What then is the implication of this argument for the inclusion of technology in any framework to explain variation in the form and content of participation? It is proposed that in routinized technological work settings, technology itself pre-empts the making of work-related decisions whereas in non-routinized technological work settings employees have opportunities for making work related decisions. In a theoretical work Koch and Fox pointed out that "Opportunities for direct participation at the technical and managerial levels are greatest in non-routine technology."⁵⁷ Although it does not enjoy an imperative status, Hebden and Shaw, have also noted that "The form of technology that may be found in a company, is an important element in establishing

that organization's starting point in the long haul to participation."⁵⁸ Thus the task of this study is to investigate the extent to which technology, as an independent variable, influenced the form of participation adopted by the two companies studied.

Environment Argument

Since the conception of organizations as open systems, the environment has emerged as an important factor in the determination of organizational structure. This position is premised on the fact that, in order to exist, organizations ought to maintain some interchange with their environment which is perceived as imposing a degree of constraint on the organization. Quoting Sadler and Barry, Child asserts that:

An organization cannot evolve or develop in ways which merely reflect the goals, motives or needs of its members or of its leadership since it must always bow to the constraints imposed on it by the nature of its relationship with the environment.⁵⁹

Environmental imperative theorists argue that the degree of uncertainty in the organization's task environment leads to certain structural correlates and organizational effectiveness is considerably enhanced when these correlates are congruent with the degree of uncertainty. Synthesizing the work of Burns and Stalker and then Emery and Trist, Jackson and Morgan⁶⁰ identified four types of environments - and their corresponding structural correlates as shown in figure 11. Summarizing the core argument of environmental imperative theorists, Child writes:

....the higher the environmental variability and the uncertainty consequently experienced, the more the prevailing structure of organization should be adaptive, with roles open to continual redefinition and with co-ordination being achieved by frequent meetings and considerable lateral communication.⁶¹

FIGURE II

Environmental/Structural Matching

	Simple Knowledge Environment	Complex Knowledge Environment
Placid environment characteristics	I. Mechanistic a. Little uncertainty b. Little change c. Standard work processes for control d. Bureaucratic organization form <i>Examples: soft-drink industry, container manufacturer, tobacco companies, much manufacturing</i>	II. Mechanistic a. Moderately low uncertainty b. Little change but a large number of variables in the environment c. Standard work skills for control d. Decentralized bureaucratic form <i>Examples: universities, general hospitals, food products, multiple-line insurance companies</i>
Turbulent environment characteristics	III. Organic a. Moderately high uncertainty b. Small number of variables but a lot of change c. Tight personal control d. Centralized organization form <i>Examples: fast-food industry, entrepreneurial firms, TV networks</i>	IV. Organic a. High uncertainty b. Large number of variables and a lot of change c. Mutual adjustment for control d. Decentralized organization form <i>Examples: airplane manufacturers, NASA, high-technology firms, commercial airlines, small computer manufacturers, electronics firms</i>

What could be the implication of the argument of the environmental imperative theorists on the form and content of participation? Hebden and Shaw have indicated that the degree of stability and uncertainty in product markets as used by Burns and Stalker is important for a discussion of the form and content of participation. They pointed out that:

Where little change has been experienced after a long period, there is little incentive for managers to seek contributions from unusual sources within the hierarchy. The problems are known; the solutions well-tried and modified through practice. Uncertainty and change, however, may make these well-tried solutions inappropriate and give rise to a need, not just for new solutions to new problems but for new ways of achieving such solutions.⁶²

Following from Hebden and Shaw therefore, the degree of stability and uncertainty experienced in the task environment of an organization will belie the popular notion that only the top echelons of the organization can contribute to the realization of organizational objectives. Instead, it will emphasize 'the contributive nature of special knowledge, and experience to the common task of the concern', which participation encourages. It is proposed that the form and content of the resulting participation will be a function not only of task environment uncertainty but also the variables specified in the explanatory framework.

Strategic Choice Argument

In recent times, the deterministic orientation of the structural contingency framework has been challenged by several organization theorists. These theorists have argued for the recognition of managerial discretion in the determination of organizational structure. The call for the incorporation of managerial discretion into the structural contingency framework has been reinforced by Pugh's claim that up till now, structural contingency framework explains only 50-60 percent of the variation in organization structure. He writes that:

"....the framework has been adequate for thinking about the degree of constraint that contextual factors place on the design of organizational structures. The degree of constraint appears to be substantial (about 50 percent of the variability between structures may be directly related to contextual features such as size, technology, interdependence, etc.) but it allows considerable

opportunities for choice and variation in particular organizations based on the attitudes and views of the top management."⁶³

The recognition that there are not inviolable relationships between structure and context has had a long tradition starting with the work of Chandler. However, it was Child's formulation of the concept of strategic choice that has generated interest in the role of managerial discretion in the determination of organizational structure. In his view, contextual variables present constraints but within these constraints organizational members or the 'dominant coalition' have some degree of freedom in initiating structures of their preference.

The rationale for incorporating strategic choice in the framework is rooted in the assumption that all organizations have a participative potential and whether that potential will be exploited or not depends on the willingness of the 'dominant coalition' to adopt a participatory structure. In a discussion of the impact of technology on the participative potential of an organization, Hebden and Shaw,⁶⁴ conceded that certain technological forms enhance the potential for participation. However, they noted that technology cannot be regarded as the determining factor, deciding whether participation is possible at all. Technology, like the other contextual factors, presents opportunities for participation which can only be exploited by the willingness of the 'dominant coalition' to adopt participatory forms. In support of this position, Hebden and Shaw pointed out that:

...those technologies (craft, unit and process) will not of themselves generate participative management;

nor does the prevalence of mass assembly technology in an organization preclude that organization from developing participative forms. Management in the latter situation may have to think more creatively to design workable schemes of participation.... They may have to work at the business of maintaining participation.⁶⁵

Support for the inclusion of strategic choice in the explanatory framework was also provided by Walker. He asserted in a theoretical work that:

"....the extent to which the organization structure of the enterprise provides for participation depends partly on the three factors (autonomy, technology and size) and partly on legal restrictions. Within limits set by these factors however, a substantial degree of choice is open to management in shaping its formal organization structure."⁶⁶

There are therefore empirical and theoretical reasons for incorporating strategic choice into a framework that seeks to account for variation in the form and content of participation across organizations.

Organizational Autonomy (Status of Management) Argument

The literature on the relationship between organizational autonomy and structure is very sketchy. However, the incorporation of managerial discretion or strategic choice into the structural contingency framework makes it intuitively plausible to investigate the extent to which key organizational members are free to implement structures attuned to their 'cognitive and motivational orientations.' It is therefore proposed that the extent to which key organizational members can implement their structural preference is dependent on the

autonomy of the organization and therefore their status as owner managers or professional managers.

Geeraerts' study, cited earlier, found that firms managed by professional managers rather than by owners tend to be more horizontally differentiated, more formalized and had higher internal specialization presumably because, owner managers prefer to keep close control over the workforce. Warner and Peccei, also investigated the influence of management autonomy and by implication, status of management, on worker participation in multinational corporations. Warner and Peccei found that the extent to which local management was able to implement their structural preferences was contingent upon the degree of decentralization of decision-making in the multinational corporation.⁶⁷

It is therefore commonsensical to argue that owner managers have lots of leeway in initiating structures attuned to their 'cognitive and motivational' preferences whereas the same cannot be said of professional managers, especially if their companies happen to be subsidiaries of multinational corporations. In this study, we intend to investigate the extent to which organizational autonomy or status of management provided structural opportunities or constraints in the form and content of participation adopted in the two companies studied.

Occupational Structure Argument

Although occupational structure is not recognized in the structural contingency framework as having any impact on the structure of organizations, it has some relevance for participation. Hebden and

Shaw, and then Poole, have all made explicit reference to the extent to which skill level in an organization can provide structural opportunities or constraint in the implementation of participatory forms. The influence of skill level or occupational structure is conditioned by the technology employed. Poole⁶⁸ has noted that the degree of complexity and education involved in the task is important in determining the participation potential. In technological situations where the degree of complexity is high it is likely that the level of education needed to carry out the task role will be equally high. In such cases, because of the high level of unanalyzable behaviour involved in the performance of the work role, employees tend to enjoy a lot of discretionary behaviour at work. Furthermore, Blauner⁶⁹ demonstrated in his seminal work on alienation that the diversity of work and the high skill levels characteristic of craft-type industries have direct consequences in terms of the discretionary power of employees over task-related decision-making.

It therefore follows from the preceding discussion that in organizations where skill and educational levels are high defacto participation could occur without conscious planning. Whilst most of this participation would be job-related it may not be unusual to find participation at the organizational level where employees may be perceived as having a meaningful contribution to make. Variation in the form and content of participation as embedded in the 'causal texture' of organizations can be influenced to some extent by the skill level or occupational structure present in the organization which determines the

ability of employees to handle the expanded work-role inherent in participation.

Summary

In this chapter, we have traced the emergence of the structural contingency framework and attributed its development to dissatisfaction with the inability of classical management theories to explain variations in organizational structure and consequent economic performance. Basically, the framework holds that there is no one best way of structuring organizations and that a fit between an organization's contextual variables and its structure enhances its effectiveness. The most significant development in this framework is the denial of an imperative status for any of the contextual variables and the incorporation of strategic choice. The literature reviewed in this chapter did not purport to rectify the methodological and conceptual shortcomings of empirical studies in this tradition. Instead, it was our objective to indicate how the variables could exert pressures on one hand and limitations on the other in shaping the form of participation introduced.

Furthermore, theoretical and empirical arguments arising out of the literature review were presented to justify the inclusion of each of the variables in the explanatory framework. Being an exploratory study, it is not proposed that only these variables can explain variation in the form and content of participation. Perrow, has observed, regarding

the selection of independent variables that:

"What is held to be an independent and dependent variable when one abstracts general variables from a highly interdependent and complex social system is less of an assertion about reality than a strategy of analysis."⁷⁰

Thus the explanatory framework serves only to provide guidance through the maze of complex variables that can account for variation in the form and content of participation.

In the next chapter the methodology used to investigate the study's objectives are discussed.

Footnotes

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CHAPTER THREE

METHODOLOGY

Introduction:

A raison d'etre of this study is to investigate why the form and content of participation varies in organizations and the factors accounting for such variation using a structural contingency framework. The major premise underlying this framework is the idea that organizational structures are contingent upon their contexts. To test such an idea, contingency theorists have conducted comparative studies on organizations operating under different conditions. In this section, the principal methodology of contingency theorists-comparative method and the techniques for data collection and analysis are discussed.

The Comparative Method

During the formative years of organizational sociology, its principal method was the case study approach. Although it did serve organizational sociologists very well, it became less useful when, in the 1960's research focus shifted to explaining organizational structures. During this period, organizational sociologists, defined as their task the building of a systematic theory of organizations to explain why organizations display different characteristics and thereby arrive at generalizations about the relationship between these

characteristics and the organization as a whole.¹ The methodology for such a research agenda involving the study of a large number of organizations necessarily, became comparative. Blau and Schoenherr defined the comparative approach thus:

The comparative approach to the study of organizations refers not to internal comparisons but to systematic comparisons of a large number of organizations designed to determine how variations in some organizational conditions are associated with differences in others. For example, in what other respects do organizations that vary in size differ.²

Lammers and Hickson have also pointed out that the adjective 'comparative' was used at that time to designate a research strategy whereby a substantial number of organizations are studied with the same methods and with the same theoretical perspective focused on properties of the organization as a unit of analysis.³

The comparative approach has been characterized by; (a) units being studied whether organizations or components are treated as analyzable wholes; (b) unit is characterized by its score on overall structural and technical attributes which are perceived as conceptually distinct but perhaps causally related; (c) overwhelming emphasis is on finding patterns of relationship existing among these variables and (d) patterns are discovered by multivariate statistical techniques on large samples or diverse units and cross-sectional data.⁴ Although the approach adopted in this study was comparative it was so only because our objective was to compare the form and content of participation in more than one organization. More accurately, it falls within the

tradition of a comparative case study because of the number of companies studied and more importantly, it enables the researcher to observe the internal dynamics or functioning of the participatory structures and compare with the formal description of these structures.

Research Sites

To explore the principal questions of this study, empirical research was undertaken in two companies experimenting with different schemes of workers' participation. One of the companies was a subsidiary of a multinational corporation engaged in the manufacture of tires and the other was a small-sized limited liability company engaged in the development and manufacture of products and services for dental teams. In order to explore the impact of the independent variables on the form and content of participation in the two companies and the resulting effectiveness as is usual of contingency studies, the companies chosen for study should ideally be in the same industry and therefore subject to similar environmental and technological conditions. Although this condition has not been fulfilled, and therefore this study cannot assess the effectiveness component of the contingency framework, there are nevertheless strong reasons for studying such dissimilar companies. First, the companies are comparable in the primacy they give to developing a participatory work organization; second, it provides an excellent opportunity to explore the processes by which different contingencies are translated into structure; and finally, as the two

research sites are so structurally dissimilar it will be interesting to explore similarities in employees' experience of participation.

Data Collection Techniques and Research Ethics

A plurality of data collection techniques was employed to investigate the objectives of the research and ethical issues arising out of such a research format such as problem of access, informed consent and maintenance of confidentiality and how they were handled are addressed in this section. Data collection spanned the period November 1984 through June 1985 with a supplementary phase between January and February, 1986 during which the author employed a variety of research techniques such as systematic observation, formal and informal interviews and use of documentary material.

The Problem of Access and Informed Consent

The admonition that researchers obtain dual entry pass into organizational settings from both management and the union or the collectivity of the workforce was adhered to. Initial contact with both research sites was made possible by the then Chair of my department. In tune with the participatory orientation of The Group at Cox, the decision to officially grant me access to the company was made at a 'Right to Share' meeting after I had outlined the objectives of my research. At Firestone on the other hand, permission to carry out the research was granted by a management representative after reading my research proposal. Although that was necessary to obtain my 'official'

pass into the plant, I needed the support not only of union leaders but that of the tirebuilders. Considering my entry point into the plant, I made strenuous efforts to persuade union officials and tirebuilders that it was not a plant sponsored research and managed to establish a relationship of mutual trust with my respondents.

In spite of the supposedly unanimous agreement of employees at the Group at Cox to have me conduct my research in the company, at both research sites, individual consent was sought and obtained after the research objectives were individually explained to them. In both companies, employees were made to understand that they were under no obligation to participate in the research especially if they did not want to. Fortunately all the eighteen employees at the Group at Cox consented whereas some of the tirebuilders in the 'A' and 'C' shifts refused to participate.

Systematic Observation

Systematic observation was one of the main data gathering techniques, especially in painting the structural features of workers' participation in the two companies. At each site, employees were closely observed at work, and questions were asked about processes involved in their work, interaction with other employees, authority relations and mechanisms for channelling employee influence. The author normally spent an average of about five hours twice a week in each of the companies. This was considered adequate because longer observation periods might have exhausted the patience of the subjects without

necessarily contributing to the data collection. It is worth pointing out that during the course of the research the author did not adhere to a rigid observation schedule, as occasionally, the observation was broken off whenever there was an opportunity to obtain further information related to the research problem. For example, attendance at meetings always provided an unparalleled opportunity to see workers' participation in action. Whilst all the employees at the small-sized company were subjects of observation, because of the size of the tire manufacturing plant, only employees in the tire room were observed. The tire room was chosen because the work there constitutes the heart of the plant's operation. It is here that stock, for example, ply, thread and bead from the various stock preparation departments are delivered by servicemen and the tirebuilders combine the stock on a tire assembly machine (TAM) to build the tire.

Formal and Informal Interviews and Maintenance of Confidentiality

For the study, the author held numerous interview sessions not only with employees in the sample but also with members of the management team. Some of the interviews involved asking respondents to complete a structured interview schedule but others were open-ended and were taped. To assure respondents of confidentiality, every interview session was prefaced with an explanation of the study's objectives and respondents were informed that as only group data would be reported as such there was no way their individual identities would be revealed. To reinforce the assurance of confidentiality, respondents were asked not

to write their names on the interview schedule. Furthermore, prior to administering the interview schedule, prospective respondents were informed that a second phase of interviews open-ended in nature, would be taped and those who were not agreeable were asked to withdraw. However, none of them objected. The tapes of the interviews were destroyed after the transcription, as had been agreed on with the respondents.

The formal structured interviews with employee respondents covered such issues as demographic background, perceived involvement in selected decisional issues at both the shopfloor and organization wide levels and outcome measures such as job satisfaction, job involvement and organizational commitment. To ascertain the suitability of items in the interview schedule, the author pretested it on about fifteen employees at the tire manufacturing plant not included in the respondent group. On the basis of this pretest, a number of questions which appeared rather ambiguous were either dropped from the schedule or modified. Furthermore, as a result of the pretest, the author decided that the best way to collect data was to go through every question as carefully as possible with the respondents making sure that he/she understood every question before answering.

The second phase of the interview which was taped covered employee experience of participation indicated by attendance at meetings, reasons for attending meetings, description of the operation of the meetings, evaluation of the effectiveness of the meetings, problems and areas of improvement. All the interviews were held on the

premises of the two companies in an office provided for the author. This ensured that respondents were insulated from the distractions on the shopfloor.

Beside the employee respondents, the author held a number of interviews both formal and informal with the President of the small-sized manufacturing company and key members of the management team at the tire manufacturing plant who were closely involved in the implementation of the participatory schemes. All the formal interviews were taped with the consent of the respondents. At the small-sized company, it was impossible to hide the identity of the management respondent since he happened to be the only person with the most knowledge about the industry.

The first phase of the interview was concerned with the background to the implementation of the scheme and a description of the formal design. The second phase was directed at obtaining information through a series of open-ended questions about their perceptions of their company's techno-economic environment. Furthermore, they were also presented with a decision list written on index cards and were asked to indicate the level in the organizational hierarchy at which the decisions were made and the mode of employee involvement in formulating the decision. Involvement modes are provided in the appendix. Responses to the decision list were taken to indicate the form, content and level of participation in the two companies.

Documentary Materials

At both companies, the author was provided some degree of access to company documents which provided a wealth of information to supplement data collected with the other techniques. At The Group at Cox, the memos of the President and various pamphlets provided detailed information about his managerial philosophy, the evolution of various structures of participation, history and objectives of the company. Although the same degree of accessibility to company documents was not available at Firestone, the author nevertheless had access to plant newsletters, organizational charts, documents on the history of the company and those explaining the production process. The author was also permitted to see videotapes of the various structures that provide for worker involvement in action. Furthermore, being a subsidiary of a multinational corporation the author was able to obtain financial information about the company from annual reports to shareholders from a local public library.

Operationalization of Variables in the Explanatory Framework

Since the analysis of data for this study was basically qualitative no rigorous attempt was made to measure variables in the framework. That is to say, no attempt was made to check the construct validity of the measures (variables) used although it was ensured that the measures captured the essence of the variables. The operational definitions and measures of variables that guided data collection are discussed below.

Independent or Predictor Variables

- (a) Size of the Company: Although there is no consensus on how size should be measured most researchers have used some count of company employees. In this study size was defined in terms of number of full-time employees.

- (b) Technology: The conceptualization of this construct follows from Perrow's definition of technology as 'the actions that an individual performs upon an object, with or without the aid of tools or mechanical devices, in order to make some change in that object.'⁵ The two technological categories employed in this study, routine and non-routine, were based on Perrow's two dimensions of technology; (a) number of exceptions and (b) degree of unanalyzable or search behavior.

- (c) Task-environmental uncertainty: Uncertainty is said to exist to the extent that relationships between elements are unpredictable. Although there is some degree of consensus about the definition of the concept of uncertainty, there are two competing approaches to its measurement: (a) subjective perceptual measures of managers, and (b) objective measures based on conditions in the task environment of the company obtained from published sources. Both measures were used but the emphasis was on the former because 'perceptual measures of the environment are more closely related to how managers relate to their environment than

objective measures.⁶ The key member in the small-sized company and the members at the tire manufacturing plant were asked a series of open-ended questions about the relevant dimensions of their techno-economic environment. These included technological instability, sales and profit margins and market instability indicated by competitiveness and frequency of plant or company foldups. On the basis of the pictures painted by each key organizational member, supported by figures on sales and profit margins techno-economic environments were characterized as either stable or unstable.

- (d) Organizational Autonomy (Status of Management): This refers to whether the organization was accountable to an external body for example, head office which was also responsible for initiating policies for the organization. In a case where the organization was accountable to a head office and key organizational member(s) has no or insignificant percentage of shares the status of the manager was defined as professional. On the other hand, where the organization was a limited liability company, was responsible for its policies and the key organizational member has significant percentage of the shares the status of the manager was defined as owner-manager.
- (e) Strategic Choice: This was measured by the style of management. Khandwalla,⁷ defined management style as 'the operating set of

beliefs and norms about management held by the organization's key decision-makers which when translated into action constitutes the organization's strategy for survival and growth and thus shapes the structure and functioning of the organization.' Indicators of management style were (a) technocracy - optimal use of resources through planning and use of management science methods and techniques; (b) organicity - the degree to which management prefers to structure various roles and relationships in the organization which corresponds to Burns and Stalker's notion of mechanistic and organic structures and (c) participation - the extent to which the organization is characterized by individual or group decision-making. On the basis of these dimensions the management style in the two companies was qualitatively characterised as democratic in The Group at Cox, and Neo-Scientific Management at Firestone.

- (f) Occupational Structure: As used in this study, the construct refers to the distribution of skill levels in the two organizations studied. Skill level was measured by the average years of education of the sample of employees in the two companies and the complexity of technology employed. On the basis of these two dimensions, the two respondent groups were either labelled high or low skilled.

Main Dependent Variable

- (g) Form, content and level of participation: The main dependent variable was composed of the three dimensions of participation - (a) form refers to the structure of participation, (b) content refers to the type of decisions subject to participation and (c) level refers to the point in the organizational hierarchy where various decisions were made. To measure this variable, the key organizational member in each company was presented with a set of a priori decisions on index cards and was requested to indicate the level at which each decision was made and the mode of employee involvement in each decision type. The mode of involvement was represented on a 6-point scale: (a) employees have no influence in our decision; (b) we would not consult but would consider possible reaction before reaching a decision; (c) we would consult and probably adjust our decision in the light of their view but the decision will be ours; (d) we would negotiate, but if unsuccessful would put our decision into effect; (e) we would negotiate and would not proceed until there was an agreement and (f) this is a matter for which we would accept what our employees want to do.⁸

Outcome Variables

- (h) Job Satisfaction: As conceptualized in this study, job satisfaction refers to an affective state about one's job and components of it. Wanous and Lawler,⁹ have pointed out that job

satisfaction and satisfaction with various facets of the job have traditionally been measured by asking people to rate their jobs or facets of their jobs on a Likert-type satisfaction scale. The same procedure was used in this study. Respondents were asked to indicate their affect ratings of various components of their job ranging from very satisfied (1) to very dissatisfied (5). Overall satisfaction was then indicated by the sum of the job facet satisfaction across all facets of the job. Symbolically, the construct of job satisfaction was conceptualized as $JS = (JFS)$ where JS = job satisfaction and JFS = job facet satisfaction. The instrument was from Loubser and Fullan.¹⁰

- (i) Job Involvement: A sociological perspective on job involvement recognizes the fact that individuals in modern society are caught in a multiplicity of roles. Following this line of reasoning, the concept of job involvement as used in this study comes close to the concept of 'central life interest' as used by Dubin.¹¹ It was defined as the degree of importance of work in one's total self-image following Lodahl and Kejner.¹² Responses were scored and summed for the overall scale to give an index of job involvement.
- (j) Organizational Commitment: Following Porter, Steers, Mowday and Boulian,¹³ organizational commitment was defined in terms of the strength of an individual's identification with and involvement

in a particular organization. They pointed out that such a commitment is characterized by: (a) a strong belief in and acceptance of the organization's goals and values; (b) a willingness to exert considerable effort on behalf of the organization; and (c) a definitive desire to maintain organizational membership. A 6-item scale designed by the above authors was used and responses were assessed on a Likert type scale ranging from strongly agree(1) to strongly disagree(5). These responses were summed for an overall measure of organizational commitment.

Data Analysis

The techniques used for the analysis of data were closely dictated by the objectives of the research. These objectives were: (a) to explore the extent to which the variables identified in the explanatory framework account for variation in the form and content of participation in the two companies; (b) investigate the extent to which respondents perceived themselves as being involved in the formulation of selected decisional issues and the influence of perceived involvement on such outcome variables as job satisfaction, job involvement and organizational commitment; and (c) the operation or dynamics of participatory structures in the two companies as opposed to the static description of the formal designs. These research objectives called for qualitative as well as simple quantitative data analysis techniques.

To achieve the first objective, key organizational members were presented with a set of a priori decisions and were asked to indicate the mode of employee involvement on a 6-point scale which constituted the form of participation, supplemented with insights obtained from the structural description of the participatory structures. To account for variation in the form and content of participation using the proposed explanatory framework, ideally should have been carried out using multivariate analysis. However, because the study focused on just two companies it was technically impossible to do that. Instead we relied on interview material and indepth observation of the independent variables in the explanatory framework to attempt a deductive post-dictive explanation of how these independent variables might have affected the form of participation in the two companies.

To achieve the second objective, we employed simple quantitative data analysis techniques such as the mean score, Pearson r and cross-tabulation. As a starting point the two sample groups' rank ordering of the selected decision was determined using group mean score. Furthermore, to determine the degree of relatedness among the two groups in terms of rank-ordering of decisions, Pearson r was used as a measure of the correlation of mean rank scores because it uses every detail. The next step was to investigate the extent of perceived involvement in selected local-medium and distant level decisional outcomes. Perceived involvement was trichotomized into low, medium and high and was correlated with the two companies for each decisional item. The emphasis here was on the percentage of respondents falling into each

category and cross-tabulation was found to be very appropriate.

Furthermore, respondent satisfaction with participation at the two levels (local-medium and distant) was ascertained with a single question and degree of satisfaction was trichotomized into low, medium and high. This was correlated with the two companies. To indirectly assess the extent of satisfaction, respondent perceived importance of decisional item was correlated with average perceived involvement score for the two companies. For local-medium decisional items, respondents were asked to indicate their desired involvement which was measured using mean score. Mean score was used because we were interested in a summary measure that provides a basis for comparing the desired involvement of the two respondent groups in the selected local-medium decisions. In addition, the mean scores were rank-ordered and a Pearson correlation of mean rank scores was obtained to ascertain the degree of relatedness among the two groups in terms of desired involvement in specific local-medium decisions. To measure the influence of involvement on the outcome variables average perceived involvement score for the two levels of decision-making was correlated with the outcome variables of job satisfaction, job involvement and organizational commitment.

Finally, to describe the dynamics of structures of participation, observational data, obtained from meetings and interview data, were qualitatively analyzed. Item analysis indicated major categories like; employee understanding of the purpose of the scheme, attendance at meetings, organization of the meeting, issues discussed, employee

evaluation of the effectiveness of the meetings and perceived problems and suggestions for enhancing effectiveness of the meetings emerged. These categories were then discussed in the light of information about the formal design of the participatory structures.

Summary:

In this chapter the techniques used to collect data were presented and ethical issues arising thereof and how they were resolved were discussed. Finally, data analysis techniques, both qualitative and quantitative used to achieve the research objectives were also discussed.

In the next chapter, the structural features of participation in the two companies will be discussed, in addition to nature and type of business, history, management philosophies and policies and the techno-economic environment of the two companies.

FOOTNOTES

1. See for example Scott, W.R. "Organizational Structure," in Annual Review of Sociology, 1975, Vol pp. 3-4.
2. Blau, P. and Schoenherr, R. The Structure of Organizations (New York: Basic Books, 1971) p.7.
3. Lammers, D. and Hickson, D. (eds) Organizations Alike and Unlike (London: Routledge and Kegan Paul, 1979), p. 5.
4. Gerwin, D. "The Comparative Analysis of Structure and Technology: A Critical Appraisal," Academy of Management Review, 1979, Vol. 4, p. 41.
5. Perrow, C. "A Framework for the Comparative Analysis of Organizations" American Sociological Review, 1967, Vol. 32, p. 195.
6. Ford, J. and Slocum, J. 'Size, Technology, Environment and the Structure of Organizations,' Academy of Management Review, 1977, Vol 2, p. 568.
7. Khandwalla, P. "Some Top Management Styles, Their Context and Performance," Organization and Administrative Sciences, Vol. 7, 1976/77, pp. 21-51.
8. Adapted from Clarke, R., Fatchett, D, and Roberts, B. Workers' Participation in Britain (London: Heineman Educational Books, 1972).
9. Wanous, J. and Lawler, E. "Measurement and Meaning of Job Satisfaction," Journal of Applied Psychology, 1972, Vol. 56, pp. 95-105.
10. See Loubser, J. and Fullan, M. Industrial Conversion and Workers' Attitude to Change in Different Industries, (Ottawa: Queen's Printer, 1970), Appendix.
11. Dubin's 'Central Life Interest' concept has increasingly being taken to be synonymous to the concept of job involvement. His definition of central life interest and the measures could be found in Dubin, R., "Industrial Workers' Worlds: A Study of the 'Central Life Interests' of Industrial Workers," Social Problems, 1956, Vol 3, pp. 131-142.

12. In spite of the increasing use of 'Central Life Interest' concept as a measure of job involvement this study adopted the definition and scale developed by Lodahl, T. and Kejner, M. "The Definition and Measurement of Job Involvement," Journal of Applied Psychology, 1965, Vol. 49, pp. 24-33. This was simply because their scale has been used by a lot of researchers and its construct validity has been attested to.
13. Porter, L.; Steers, R.; and Boulian, V. "Organizational Commitment, Job Satisfaction and Turnover Among Psychiatric Technicians," Journal of Applied Psychology, 1974, vol. 59, pp. 603-609.

CHAPTER FOUR

THE COMPANIES: HISTORY, BUSINESS AND PARTICIPATORY STRUCTURES

Introduction

In this chapter we will provide a description of the participatory structures in the two companies, techno-economic environment, business structure, history, management philosophy and policies.

The Group at Cox¹

History:

The Group at Cox is a small-sized limited liability company located in Stoney Creek, Ontario. It is a research and design company involved in the development and manufacture of dental equipment and provision of services in the form of the adaptation of open office planning concepts to the dental office. Furthermore, through the use of 'clinics' and seminars it shares basic information on how to organize for sit-down dentistry.

The company started in 1964/65 when for health reasons the original founder Don Coburn, a dentist by profession, was told he would need to sit-down to practise dentistry. This led him to use an early version of a dental chair, while experimenting to improve his operatory made him both an inventor and researcher. At this point, Don Coburn

entered into partnership with Ron Cox a local tool and diemaker and together with two other employees they started Cox Dental Manufacturing Company. The Company's official product was called a vacuumatic, a device that hangs on the arm of the dental chair on the assistant's side with a high volume evacuation hose, a saliva ejector, a vacuum cup and a water drinking cup. Don Coburn's most dramatic innovation however, was a dental efficiency centre comprising a free standing cabinet, designed to be positioned behind the dentist's chair.

The company became insolvent during its formative years and was going out of business in the fall of 1966 when Coburn telephoned Wilson Southam, a patient of his with an interest in the dental industry. At this point Southam made an investment in the company and in 1969 bought controlling interest and moved the company from its third floor workshop premises to its present site in a two-storey building in this industrial area in February, 1969. The company however, continued to produce Coburn's original design which consisted of a chairside system, a chairside laboratory, a storage laboratory and an assistant's unit. This system called The Cox Open Operatory is essentially a work station without walls and has been designed in such a way as to facilitate the delivery of dental health treatment in a comfortable, logically organized environment.

During this period, Cox Systems Limited as the company was then known started to research new criteria for the design of a dental health facility when it was realized that the operatory was only one element of the dentist's environment. Utilizing architectural principles of office

landscaping the company introduced into dentistry a new approach to space planning which attempts to rationalize the flow of traffic in the dentist's office, plan storage locations and generally, provide pleasant surroundings for effective work. In 1975, it was felt that this new dimension to the company's own design criteria should be reflected in its name. Thus, for the next two years the company changed its name from Cox Systems Limited to The Group at Cox with Wilson Southam as the principal shareholder and president and two other shareholders who with Wilson Southam, constitute the Board of Directors.

The Structure of Business and Organization of Work

Under the umbrella of the Group at Cox are two groups catering to the dual business interests of the company. At the plant section of the company is the products group involved in the manufacture of dental work stations (cabinets) and at the office section is the professional services group. This group is involved in organizing seminars and workshops to share information on how to prepare for sit-down dentistry and also the design of a dental facility appropriate to sit-down dentistry. Although the two groups are located in different sections of the company building their products complement each other and there is a lot of interaction between employees, socially and task-related. For example, an employee (designer) in the professional services group is responsible for the design of the dental work stations.

The Products Group

As pointed out in the preceding section, the products group's main task is the manufacture of work stations to facilitate sit-down dentistry. The group itself is divided into two functional communities, cabinetry assembly and cabinetry hardware indicating the two phases in the manufacture of dental cabinetry. A functional community is a group of employees who work closely together usually physically in the same place and possess requisite skills to complete a phase of the group's task. Within the functional community each employee is responsible for a specific task although he/she on completing the task may help other members of the community who may be behind. Each employee within the community is responsible for the quality of his/her operations and in theory organizes his/her work time. However, because the output of a community member is the input of another there is a subtle pressure not to holdup the production process. Collectively, members of the community are responsible for meeting output targets and ensuring quality products.

The cabinetry assembly community comprises three cabinet makers and a cabinet assembler. The production schedule drawn by a machinist working in the cabinetry hardware community and the receptionist (information co-ordinator) is based on orders received from prospective customers. The schedule is posted on a board in the plant and every employee of the products group is provided with a copy. The schedule specifies how many cabinets (work stations) will be needed to meet orders and against each employee's name is indicated his/her role in

meeting these orders. For example, against the name of a cabinet maker may be indicated the number of counters he is required to produce within a specified time.

The raw material in the form of particle boards are ordered from a supplier in Southern Ontario. These particle boards are then sent to a nearby company for prelamination. Based on the specifications on the production schedule, one of the cabinet makers using a semi-automatic machine cuts the board into various shapes and sizes. The cabinet maker places the board on the machine's flat surface and holding both ends of the board manouvres the board around the saw hanging above the flat surface and cuts the board into the required shapes and sizes. He then arranges the pieces by shape and size on a work bench close to the next work station. Next, another cabinet maker selects the cut pieces that will provide the wooden framework of the cabinet and using a pencil he marks where he will cut the grooves. With the help of a manually operated machine the employee places one at a time the cut piece at the centre of the machine's surface and hanging above it is a piston-like edge which he depresses to cut grooves into the pieces. This is done to reinforce the cabinet when the parts are pieced together. This phase over, he also arranges the pieces together by shape and size on a workbench ready for the next phase.

At the next phase another cabinet maker does what is described as cabinetry edging. Basically, the material used is arborite but depending on what is indicated on the schedule the employee uses the appropriate arborite colour to edge the outside of the pieces. This is

a manual operation whereby he uses a wood glue first, to plaster the edges and then applies the arborite. He then uses a hammer-like tool to press the arborite to the wooden piece. Next, a cabinetry assembly worker with the help of the cabinet maker who does the edging team up to assemble the pieces forming the counter, shelves and generally the wooden framework of the cabinet. This is basically a manual operation but occasionally screws and glue are used to fix shelves and the wheels under the dental assistant's unit attached to the work station. This then completes the work of the cabinetry assembly community.

The next phase in the work of the products group is the cabinetry hardware community. This community comprises a machinist, an electrical parts assembler and a purchasing clerk who doubles as an electrical parts assembler. It is responsible for installing electrical and plumbing components and the wooden framework. Most of the electrical parts are obtained from ADEC, a major dental equipment manufacturer under an agreement signed in 1976. However, such parts like knobs attached to the shelves and other accessories are produced in the machine shop by the machinist in a separate section of the plant. Using hand operated machines like a driller and other tools such as screwdriver and hammer, the electrical parts assemblers work on a bench where they first sort out the various electrical parts, that is to say intertwine the negative and positive chords, fix the plugs and then run these chords through holes drilled in the wooden framework. The plumbing parts, that is the sink, taps and sewage system, are fixed by the machinist. The finished product is then cleaned by an auxiliary

employee, parked and warehoused in a section of the plant to await shipment direct to the customer.

The Professional Services Group:

The Group at Cox entered the North American dental equipment manufacturing industry by exploiting the demand for sit-down dental work stations. However, research over the years uncovered behavioural problems like stress and interruptions in the provision of dental service consequent upon the shift from standup to sit-down dentistry and the changing orientation from restorative to preventive dentistry, that is to say, from a dental practice concerned with filling cavities to one concerned to teach individuals to take care of their mouths to prevent dental diseases. This branch of the company's business aims at sharing information tailored to help dentists respond to the problems with the shift from restorative to preventive dentistry through seminars and the design of dental offices to support not only sit-down but preventive dentistry as well.

As in the products group, the ten employees comprising this group have been divided into functional communities with each community responsible for a specific phase in the service rendered to clients. These communities are Learning, Team Building, Design, System and Book Production. Although each functional community is autonomous they are interdependent and depending on an employee's skill he/she serves on more than one community. Each employee occupies a spacious office where he/she works on his/her piece of the community's task and community

meetings held to discuss the community's work are co-ordinated by Wilson Southam.

The work of the Professional services group starts with the learning community which comprises an information co-ordinator, marketing co-ordinator (tracks down potential clients and mails brochures) and long-range planning and presentation co-ordinator (responsible for planning seminars). With Wilson Southam as the informal leader of this community, the community members who have extensive knowledge on the dental industry and its problems prepare material for presentation at seminars, workshops and clinics organized either in the company's seminar rooms or for Southam's speaking engagements throughout North America. These employees have received their training on the job. During the learning period which is organized along the lines of classroom instruction dentist clients are provided an overview of the dental marketplace and how to enhance a dentist's effectiveness. Such problems as competition among dentists located in urban areas, the routine, repetitive and stressful nature of dental practice and generally the rationale for practicing preventive dentistry. The emphasis here is on disease prevention and health education based on the recognition that dental disease should be related to the whole body rather than the restorative or treatment model of dental practice.

Dentists who are interested in the company's approach to making the practice of dentistry less stressful and more effective return to the company for the next phase of the professional services group's

work. This involves the systems community comprising a designer, a financial planning co-ordinator and Wilson Southam. Based on the background work of the learning community the systems community using large, thick white sheets and markers specialize in the conceptual presentation of problems facing the dentist. In a spacious room, the community members and the dentist client sit around a table to discuss the problems and help the dentist to create a specific model of practice he/she will like to have. Generally, issues discussed with the dentist include the mix of services he/she would like to offer, duration of each service, fees associated with the mix of services and the cost of space needed to support this model of practice. The information generated is presented as a graphic or visual business plan.

The dentist client then meets the team building community which comprises a dental hygienist, a designer and the financial planning co-ordinator. The conversion from restorative to preventive dentistry has meant an enlargement of the traditional services of the dentist and hence an increase in the number of support staff. This community is concerned to help the dentist solve staffing problems depending on the mix of services the practice will offer. For example, how many dental hygienist assistants, receptionists, extra-oral services assistants (nutritional counselling) and how their roles will be defined. This work is carried out in the seminar room where members of the team-building community use markers to explain the relationship between the work of the support staff and the extent to which it is supportive of a health-centred model of dental practice.

The design community consisting of the company's three designers is responsible for outlining to the client the effect of space utilization of the various concepts and roles discussed with the previous communities. The members of this community, using markers, create a conceptual design called 'bubbling', a process whereby they draw a picture of the facility and calculate its size. This picture is sent to the client to check if it conforms with building regulations in his area. If not, modifications are made and a designer is assigned the task of designing the facility. Although it appears to be an individualized activity the members of the community work closely together in terms of feedback. Using the materials of a draughtsman members of the community design a plan which rationalizes the flow of human traffic within the facility, storage locations and office area.

The final phase of the work of the professional services group is the Book Production community. This community is made up of the information co-ordinator, marketing co-ordinator and an employee responsible for administrative and accounting duties. The task of this community is to collate the results of the clients work with the various communities and presented in a book form. This book typed by the employee responsible for administrative and accounting duties enables the client to read at his pace elements of the plan and also serves as a tool with which he deals with builders and bankers. Furthermore, this employee prepares checks of members of the group, keeps track of the company's financial transactions and purchasing of office materials.

Demographic Characteristics of Employees

The table below provides the basic demographic characteristics of employees in the company as obtained from employee responses to an interview administered by the author. The table indicates that the company has a mature workforce, most of whom are married, had high school education and have been with the company for more than ten years.

Table 1: Demographic Background of the Group at Cox Employees

N* = 18

Sex:	Male	9	Education:	Below High School	3
	Female	9		Completed High School	9
		<u>18</u>		Completed College	5
				Graduate or Professional Training	1
					<u>18</u>
Age:	35 years or less	5			
	36-45 years	6			
	Over 45 years	7	Marital Status:	Single	1
		<u>18</u>		Married	12
				Other (divorced etc.)	5
					<u>18</u>
Years With Company:	5 years or less	2			
	6 - 10 years	6			
	Over 10 years	10			
					<u>18</u>

* This number excludes the president and a part-time employee

Techno-Economic Environment

The dental equipment manufacturing industry is defined by the manufacture of chairside operator or work stations, marketing of health services, facility analysis and design. The market for the industry is provided by general and specialty dental practitioners scattered over North America.

At the turn of the century, marked increases in the standard of living in North America were accompanied by a corresponding increase in tooth decay and other dental problems. Consequently, there was a great demand for dentists who, in turn, needed dental work stations. Dental equipment manufacturers then sprang up all over North America producing very specialized products for the dental team. A further boost to the development of this industry was the change over from a stand-up to a sit-down dentistry, from restorative to preventive dentistry and the need to design dental offices to support this conception of dentistry. In the view of the president of The Group at Cox:

"The main factor that gave us chance to start was the manufacture of equipment for dentists who wished to sit-down to work. It became apparent after the invention of high volume suction that you could lie a person flat and suck saliva with high volume suction.... Growth continued to be based on the broader view that with sit-down dentistry dentists needed a new configuration of design in the offices..and preventive dentistry which enabled them to expand appropriately to the demands of sit-down dentistry."

Because products of this industry go mainly to general and specialty, private dental practitioners, the market is extremely

sensitive to downturns in the economy. This is because recessionary trends affect the ability of dentists either to expand or set up new practices. Wilson Southam pointed out that:

"During the late 1960s and early 1970s individuals with dental licence couldn't miss. In recent times, however, only 18% approximately of dental students set up practices and more importantly the cost of setting up new dental practices has arisen so alarmingly and has slowed down the purchase of new equipment. Among the few setting up practices emphasis is on less expensive products and although they are less functional cost is a major factor."

The stress on cost effective products coupled with the flattening out of the market has led to intense competition and the folding up of such big companies as S.S. White, Webber and Ratter. The most pressing problems characterizing this industry is the development of cost effective products. Wilson Southam indicated that the:

'Dental industry is a small industry. Being a special niche market it supports neither a big product nor investment. To be effective in that niche market a company needs on the production side a full range of products which are continually revised. The shrinkage of the market and fold ups were due to failure to recognize that companies which had not developed cost effective products were not going to make it.'

The manufacturing process in this industry is characterized by a simple technology although in the few companies that have volume, the manufacturing process has been affected by numerically operated machines. Since the production of dental equipment does not rest on any body of scientific knowledge and the process is quite simple, the

industry is characterized by a lot of copying and miniaturizing. Product revision is almost negligible in the industry and therefore the production process has been very stable.

In Wilson Southam's view, the most dominant competitive issue facing firms in this industry is that:

"...for a company to stay competitive especially if it has serious volume, engineering people will need to work flat out to see the impact of available technology. Firms have to be innovative by way of introducing new products. At the same time dentists have much less disposable incomes used in capitalizing products. So if a firm is to appeal to them and therefore stay competitive, products must not only be innovative but also cost effective."

The impact of such a techno-economic environment on the form and content of participation in the company will be explored in the next chapter.

Management Philosophy

In a discussion of theories of management, Miles² identified three such theories - traditional or scientific management, human relations and human resources. The latter which aptly describes the managerial philosophy at The Group at Cox is predicated on the assumptions that work is not inherently distasteful and that employees can exercise far more self-direction than their jobs demand. Following from these assumptions, the manager's basic task is to make use of this untapped human resources by creating an environment in which employees may contribute to the limits of their ability as members of a work

group. Furthermore, the manager is supposed to encourage full participation on important issues as a way of broadening subordinate self-direction or involvement.

The oft-quoted managerial philosophy at The Group at Cox is to 'to provide the structures within which the uniqueness of each of the members can be expressed and opportunities provided them for finding meaning in life.'³ The idea of finding meaning in life is conceptualised in terms of Maslow's⁴ concept of humanness and therefore his need hierarchy theory. In a statement on 'Working Together at Cox' the Maslowian notion of humanness was expressed thus:

'We need a chance to grow to do interesting and important work and to know that we are using ourselves and our talents as fully as possible. We need opportunities for responsibility defined as ability to fill our own needs without depriving others of the ability to fill theirs.'⁵

Freedom or self-direction is seen as a prerequisite for the personal development of employees. This notion of freedom is the premise for the set of principles that govern the design of work in the company. These principles hold that: (a) there is only one honest speed for anyone doing any kind of work and that is the speed with which the individual feels he is doing a quality of work in which he can take pride; (b) given an unmeasured high trust setting, the individual is the best judge of how he should organise his work activities; and (c) all production work is knowledge work and each individual must be given an opportunity to perform a wide range and variety of tasks if he is to

continue to grow in professional competence.⁶ In order to reinforce these principles for work organization a statement in 'Working Together at Cox' defines the role of management as "a resource facilitator to ensure that employees get information and materials they need to do their jobs properly and are left alone to do them."⁷ Thus, the management philosophy fosters a low degree of technocracy in that in making work-related decisions heavy reliance is placed on employees with experience rather than consulting or hiring an expert.

One of the cornerstones of the managerial philosophy in the company is ensuring freedom of expression and deliberately encouraging democratic decision-making. This goal is expressly stated in the 'Working Together at Cox' statement thus:

'Our goal is to evolve structures whereby employees affected by decisions made in the company will be involved in making these decisions and thereby provide an opportunity for employees not only to grow but control their destinies.'⁸

The idea of community is deliberately fostered in the company. This does not only imply work sharing but more importantly, the creation of an environment whereby employees can co-operate with each other, live with each other's weaknesses and be sensitive to each other's needs. A statement in the 'Working Together at Cox' papers underlines this notion of community thus:

'It is the goal of The Group at Cox to create a work environment where there will be a high sense of trust, belonging and by working co-operatively achieve the objectives of the company.'⁹

This sense of community pervades the company to the point that all employees address each other on a first name basis and they collectively refer to themselves as 'Coxees'. An integral part of this community atmosphere is the acceptance of responsibility whether at the individual or group level. For this reason there is a high degree of organicity as there is no formal job description and what is considered appropriate work behaviour is determined by the employee's personality. Accountability is achieved through peer pressure.

Although the assumptions on which the managerial style at The Group at Cox is predicated fall within the human resources model of management, the management style also approximates what Khandwalla termed democratic. This is characterised by 'a strong emphasis on participation and consensual decision-making ... a premium on organic relations and flexibility. decision-making tends to be seat-of-the-pants rather than technocratic...'¹⁰

The Structures and Content of Participation at The Group at Cox

Background

The Group at Cox entered the North American dental equipment manufacturing industry as a small-sized company organized along the lines of a conventional workplace in that it had a clear chain of authority represented on the shopfloor by a foreman, detailed job description and time clock. However, when Southam bought a third interest in the company and starting working as full-time general manager he gradually introduced an open style of management. Some of

the old employees recalled occasions when he invited them into his office to discuss the status of the company and welcomed suggestions. Ron Cox, one of the founders of the company did not subscribe to Southam's democratic style of management and the resulting personality clash was resolved by buying Ron Cox out. In 1974, Southam introduced employee self-managed flex-time, group autonomy and allowed employees to elect co-workers to form a representative council with an increase in the number of employees. A series of gradual modifications have been implemented throughout the years, especially at the organizational level. Almost all these changes were initiated by Southam whose objective was to help create an environment where employees can self-actualize whilst working to achieve the goals of the company.

Work-Level Participation

Employee Self-Management

The building block of work organization at The Group at Cox is the concept of employee self-management. Introduced in 1974, employee self-managed flex-time was designed to provide employees an unusually high degree of latitude in the performance of their work roles. This system dispenses with supervisory roles in both work groups as employees take over the role of directing their work behaviour insofar as they put in 1680 applied hours per year. All employees are supposed to work during the core hours of 10 a.m. to 2 p.m. and outside these hours the employee has the privilege of organizing his/her working time and could therefore start early or work late.

However, because there is a high degree of interdependence in the production flow an employee's level of discretion is somewhat curtailed by his/her sense of responsibility and role in the manufacture of the finished product. In a structural sense, employee self-management as practised at The Group at Cox is a system of work organization where the individual employee is responsible for the planning and execution of his/her work role underpinned by a sense of responsibility and peer pressure.

In a theoretical discussion of the concept of employee self-management, Manz and Sims¹¹ pointed out that the concept can be perceived as a substitute for leadership and involves self-instruction toward achieving both individual and organization goals. As a system of direct participation, employee self-management provides employees in the company opportunity to engage in discretionary behaviour on the job.

Group Self-management:

A 'Working Together at Cox' paper states that:

'....reinforcement of craft standards, skill development and knowledge can occur when an individual with special skill is physically associated in well organized space with his peer reference group - the functional community.'¹²

It was pointed out in a preceding section that the company's work is divided amongst two groups - the Products and Professional Services. The work of each group is however, divided into distinct phases and each phase is undertaken by a functional community. Within the functional

community may be two or three members sharing relevant occupational interest or skill. The work of the community is shared amongst the members by themselves or posted on a schedule in the case of the product group. Members of a functional community are collectively responsible for attaining production targets and meeting quality standards, ordering raw material through the employee responsible for purchasing and also participate in the selection of a new employee joining the community. Each functional community is therefore responsible for a segment of the production process and has responsibility for its management. Individual members have identifiable tasks but because of collective responsibility shared by members of the community and the company as a whole they not only help their community members who are behind but other communities within the same group especially, if the job involves no specialized skill.

Thus, through employee self-management and group self-management employees in the company have been provided a lot of autonomy in performing their daily work roles together with substantial involvement in making work related decisions.

Organization-Level Participation:

Committee for the Success of the Person

Through this committee employees are involved in personnel decisions specifically, hiring. The Cox 'Working Together Paper' describes the process thus:

'The 'committee for the success of the person' is a process for successfully enlarging an effective work group. It is designed for groups sharing, or wishing to share a people centred philosophy of working together.'¹³

The objectives underlying the process include: (a) to make it possible for members to share responsibility for bringing a new person into their group; (b) to provide potential new employees with the opportunity to experience high trust and openness throughout the process; (c) to ensure an opportunity for representative participation in the decision to invite a particular candidate to join the group and (d) to afford the new person and group members ample time to fully imagine and carefully consider the wisdom of developing a working relationship.¹⁴

The hiring process involves five phases. These are Searching, Buying the Group, Personal Research, Committee for the Success of the New Person, and finally The Basic Deal. The decision to employ a new member is made when members of a functional community inform the rest of The Group of the need to have a helping hand if quality standards are to be maintained. If there is no employee to be floated the Group decides to hire a new person.

At the searching phase, two employees from the prospective employee's functional community form a search team. This team is charged with the responsibility of identifying suitable candidates which is done either by advertisements or whatever procedure the team chooses. Prospective employees are then invited to visit the company. During the 'buying the group' phase each candidate is introduced to the Group by the search team and watches for spontaneous behaviour which might be

indicative of suitability. For example, 'What ideas excite the visitor?' and 'What are the responses to people met along the way?' Candidates are then requested to ponder over the experience before indicating any interest to join the group.

The preferred candidate is chosen after this phase based on his/her technical ability, the extent to which he/she can handle self-supervision and get along with members of the functional community and the company as a whole. The prospective employee is then asked to visit the company for a week to do personal research. This involves his/her talking to members of the group to find out more about the nature of the company's business and to see how easily he/she could get along with other employees. A committee for the success of the person is then formed comprising two people who will work closely with the prospective employee and the other two he/she will have minimal contact. The prospective employee meets with each member of the committee and interviewed on issues ranging from technical competence to interpersonal relations.

After meeting every member of the committee, the members meet to deliberate if he/she should be hired and they must as a rule unanimously commit to the applicant before hired. The last phase if the employee is hired is to contract a basic deal. This process involves setting an annual salary, terms and conditions of employment including the minimum annual time at work.

Participatory Voting on Pay

Gain-sharing plans have been recognized as an effective means of rewarding employee effort by tying it to productivity increases. What is distinctive about The Group at Cox's gain-sharing plan is that employees participate in setting pay differences among themselves. This practice is premised on the fact that nobody knows better than community members the performance of individual members and therefore they are better qualified to set pay differences among themselves. Through this process, employees participate in setting top and bottom limits in terms of pay raises.

The process entails employees ranking those with whom they work closely on such dimensions as dependability, quality of work, initiative, creativity, responsibility and interpersonal relationships. The ratings are scored on a Likert type scale ranging from most negative to most positive. On the basis of these ratings, each employee indicates which person in his/her group deserves the most raise based on his/her contribution to the group's success for the year.

Participatory voting on pay however, only provides broad outlines within which the pay committee works comprising the company's accountant, a senior employee and the president. On the basis of the company's financial picture and therefore how much is available for salary increases, the pay committee computes the actual percentage differences based on employee ratings. Wilson Southam highlights the purpose of the process thus:

"The purpose of the voting is to advise me as General Manager, on how to make differences in pay as fair as possible to each member of the group while keeping in mind some of the realities of the world in which we live. Setting pay rates is not a question of policy and remains a responsibility of mine as General Manager... Consequently, I am not bound to follow the results of the voting or other advice offered..."¹⁵

Theoretically, an employee who is dissatisfied with his/her rating can lodge a complaint with the General Manager who in turn can request for a repeat of the process but as far as this author was aware it has never been done.

Grievance Procedure:

A prerequisite of industrial democracy as identified by Bernstein¹⁶ is the guaranteeing of individual rights and fair judicial process. In a memo to employees, Southam outlined the rationale behind the appeal system at Cox thus:

"Under Canadian law, the General Manager has the power to dismiss but there are a number of safeguards for employees. At Cox, employees work together to ensure that this power is used properly. The appeal system is just one of several ways of trying to ensure that this managerial power is used responsibly and legitimately in terms of values and the laws of Canada which of course must also be obeyed."¹⁷

Any employee who feels authority has been used improperly against him/her as a first step seeks an advisor or representative and informs him/her of the decision to appeal. The advisor must as a rule be an employee of the company and his/her function is to help the applicant

put forward the best possible case. The individual said to have used authority improperly is called the Named Person. Present for an appeal hearing are the appellant and his/her advisor, the Named Person or Persons, representatives of the shareholders and the President. Witnesses may also attend to give evidence otherwise it is a closed hearing.

At the hearing the appellant states his/her case and the named person or the General Manager usually provides information pertinent to the case. The appellant and his/her advisor could ask for an adjournment to re-think the case and even request for more information. At the second hearing, both sides are allowed to present their cases and the panel made up of the President and a representative of the shareholders after a period of deliberation gives a verdict. If the appellant is not satisfied he/she can appeal the decision. Examples of cases brought before the grievance procedure included theft or fraud, physical violence and work behaviour calculated to hurt the company's reputation in terms of work quality.

Right to Share Meetings:

'Right to Share' and 'Town Hall' meetings together provide employees an opportunity to participate at the organizational level. These schemes have emerged gradually from ten years of experimenting with quality of work life schemes. The Cox Working Together Paper on 'Right to Share Meeting' describes the process thus:

"The Right to Share Meeting' is a process for enhancing the quality and productivity of small group meetings. It is designed for groups which share or wish to share, a people-centred philosophy of working together."¹⁸

Objectives underlining 'Right to Share Meetings' include: (a) To respect the personal power of each member of the group by opening up control of the meeting process; (b) to foster effective relationships among small group members through sharing of responsibility for achievement of the group's mission and goals; (c) to demonstrate that people who experience their own power will tend to use this personal power responsibly and (d) to share responsibility for maintenance of a healthy interpersonal and organizational climate.¹⁹

The first step in organizing a 'Right to Share Meeting' is to choose a desirable setting large enough so that participants can be seated in a circle. A meeting facilitator is then chosen at random or alternatively, a member of the group volunteers. Each individual present names a subject he or she will like to discuss in a clockwise direction. For example, problems with the organization of workshops, purchase of new equipment, phone calls from clients and fees for attending workshops. Against each subject is added the name of the sponsor. This process continues until participants have run out of subjects for discussion and the list is closed.

Having identified an agenda for the meeting, the meeting facilitator asks the individual members to discuss the various subjects in an orderly manner. Each subject is discussed until consensus that is to say absolute unanimity, is achieved. Right to Share meetings are

held once every two weeks unless the President is away on speaking engagements.

Town Hall Meetings

Town Hall meetings follow exactly the same format as 'Right to Share' meetings. However, unlike the latter, Town Hall meetings are held once or twice a year during which members of the group take stock of the company's performance and formulate strategies for the coming year. Issues discussed at such meetings include a report by Wilson Southam on the company's performance - basically a balance sheet of the company. Suggestions are then welcomed from employees on how to improve the company's performance and to draw up a mission statement for the company.

The Management Committee:

In a structural sense this committee is the highest decision-making body in the company. Membership includes the president, a senior employee and the company's accountant. As a committee they meet once a month or so as needed to discuss the company's performance and generally act as representatives of the company. This committee is however, not involved in the day to day running of the company which is delegated to employees acting within work or functional communities or collectively through organizational level structures of participation.

Firestone Hamilton PlantHistory:

The Firestone Hamilton Plant is a subsidiary of Firestone Tire and Rubber Company headquartered in Akron, Ohio. The Firestone Organization was incorporated in Ohio in 1910 as a successor to Firestone Tire and Rubber Company, a West Virginia company formed in 1900 by Harvey S. Firestone. In 1902, he purchased a small factory in Akron and began manufacturing carriage tires with production of automobile tires starting in 1904.

In 1919, Firestone decided to expand his tire company. Under his personal direction plans were drawn up for the building of a tire plant in Hamilton. By 1922, a four storey tire manufacturing plant had been built on a tract of bayfront farmland in Hamilton, Ontario. Early records estimate that about 150 employees were employed at this plant and cured its first tire on September 15, 1922. Four types and sizes of tires were produced and this included fabric and high pressure cord tires, solids and inner tubes.

During the past decade however, many major expansion and modernization programs have taken place in the plant thereby adding new capacity to meet the rising demand for Firestone products. The Hamilton plant and factory office together take up close to one million square feet and employ 1,692 people. At one time the plant used to produce all sizes of tires but the plant now specializes in the production of truck, tractor, forestry and passenger light truck tires as well as radial truck tires principally to replacement markets in the United States and

secondarily, to original equipment (car) manufacturers in Southern Ontario. Approximately 11 million pounds of tires are warehoused monthly.

All the production or "clock" employees are unionised and form Local 113 of United Rubber Workers Union. In order to make the most out of the investment in expensive tire manufacturing equipments the plant runs a seven-day four-shift operation. Each shift lasts 8 hours with two break and lunch periods. With the exception of tirebuilders who are on piece-work all the production workers are paid hourly wages.

Business Structure and Organization of Work in the Tireroom:

The Firestone Organization is an international manufacturing and marketing company whose major products and services are related to the transportation industry. The dominant business of the company is the development, manufacture and sale of tires for original equipment and replacement markets around the world. Operations of the Firestone Organization are managed through three groups. These are: The World Tire Group; The Sales and Marketing Group and The Diversified Products Group.

The World Tire Group (WTG) of which the Hamilton plant is a member was formed in 1982 bringing under one umbrella the previously autonomous North American and International Tire Groups. The WTG is responsible for the design, development, testing and manufacturing facilities of Firestone world tire operations. In 1982, WTG increased its share of the passenger car, light truck and off highway original

equipment tire markets in the United States and Canada. Through the activities of WTG, the Firestone Organization has maintained its position as a leading supplier of original equipment tires to manufacturers of automobile trucks, agricultural and construction equipment. For example, during the first quarter of 1985 operating income from tire related original equipment and wholesale activities totalled 7 million dollars compared to 2 million dollars for the previous year.²⁰

Organization of Work in the Tireroom

Work in the tire plant illustrates a case where the workflow is organized so that different departments work on successive stages of the production process. In the mixing department natural and synthetic rubber, carbon black, pigment and oil are processed in the plasticator machine and the fully automated banbury. The processed rubber is then moved to the calendering department where the fabric is treated into steel cord runs in the humidity controlled creel room. At the bead and stock cutting department rolls of fabric impregnated with rubber are cut in ply-sized strips at a pre-determined angle called bias cutting. Products from these stock preparation departments viz; tire or body ply which is a fabric nylon; bead which is a rubberized wire wrapped in fabric and thread which is a strand of rubber are all transported to the tireroom by forklifts. Essentially, the work of the tireroom is to combine all these components supplied by the servicemen on a semi-automatic tirebuilding drum. The rationalized organization of work has

led to two categories of employees - the management team (comprising departmental manager, foremen and supervisors) and the tirebuilders.

The supervisor represents the lowest level of line authority in the tireroom and is responsible for ensuring that each builder has a machine, verifies downtime reported by the builder and quantity of tires built during the shift by his crew of builders, reports machine breakdowns to the maintenance department and generally ensures that his crew members have the resources to build tires. Next, are the foremen who share some of the functions of the supervisors. For example, ensuring steady supply of stock and that maintenance men fix broken down machines. Furthermore, he is responsible for running statistical or quality control programmes. At the apex is the departmental manager who is ultimately responsible for running the department. He ensures that production quotas are not only met but at cost-efficient prices. He is also responsible for drawing up long range plans for the tireroom, informing stock preparation departments of defective stocks and lastly, communicating to tireroom employees the progress report of the department.

At the base of the line authority are the tirebuilders who "own" tire assembly machines (TAM) that build different tire specifications as indicated by the scheduling department. The quantity of different tire specifications needed for the month is determined by the head office in Akron and the scheduling department breaks it down on a daily basis and passes on to the tireroom. The builders receive their stock from the stock preparation departments through the servicemen and assemble these

stocks on a semi-automatic tire assembly machine. It is an individualized process and because the TAM is semi-automatic the builders basic manual operations like set-up, assemble of stock on the tirebuilding drum have all been standardized. However, unlike assembly line workers, tirebuilders can vary their work rhythm. To minimize the degree of control they have in this regard, time and motion studies have been used to determine how many tires of whatever specification could be built within an eight-hour shift allowing for two breaks and a lunch period. A builder's wage for the day then is calculated by multiplying the number of tires built by the basic rate which is issued every day as earnings statement.

If there is no disruption in his routine the builder performs the repetitive task of building tires until he has achieved a 95 percent or more effectiveness. Percentage effectiveness is calculated by number of tires built and the number of downtimes experienced. The main source of pressure for builders is the lack of control they have over breakdowns which affect their wage. Although most builders can handle jams and other mechanical problems they are specifically forbidden from doing so and all breakdowns whether electrical or mechanical are supposed to be reported to the maintenance department describing the nature of the problem and the type of tire assembly machine. The builders like any other production employees work their machines around the clock and rotate through the shift on a weekly basis and the day shift takes two days off before starting all over again.

The built tires or, in the jargon of tire plants, green tires are

placed on conveyor belts which are later sorted out by servicemen and sent to the cure room. In this department, the tires are placed in a curing mold at high temperature and pressure. The molded tires are then trimmed, given a final inspection where they are tested for balance, endurance, and lateral check. The tires are then cleaned, sorted and warehoused to await shipment.

Demographic Characteristics of Respondents in the Tireroom

The table below provides basic demographic characteristics of sampled employees in the tireroom. Most of the tirebuilders are married, in their mid-thirties or late twenties and have worked for the company for a long period. Their level of education is relatively low compared to employees at The Group at Cox but since tirebuilding is an industry specific skill the three-month tireroom training programme is all that is needed to be a high quality builder.

Table 2: Demographic Background of Respondents in the Tireroom

N = 30

Sex: Male	30	Education: Below High School	13
Female	<u>0</u>	Completed High School	<u>17</u>
	30		30
Age: 35 yrs. or less	17	Marital Status: Single	6
36 - 45 yrs.	7	Married	22
Over 45 yrs.	<u>6</u>	Others	<u>2</u>
	30		30
Years with Company: 5 years or less	9		
6 - 10 years	7		
Over 10 years	<u>14</u>		
	30		

Techno-Economic Environment:

The tire industry is highly integrated, extending from establishment of rubber plantations through tire plants and sales and service outlets. The market for the industry is defined by supplies to original equipment and replacement markets. Because of its specialized products and therefore market, the tire industry is extremely sensitive to the state of the automobile industry which is also dependent on the state of the economy. The ongoing competition between North American and Japanese auto manufacturers, inflationary pressures and general reduction in driving because of escalating gas prices have all combined to affect both the original equipment and replacement markets for the tire industry. Asked to discuss the impact of inflation on the tire industry one manager put it this way:

"Inflation hurt the tire industry just like it hurt other industries but the tire industry has more peculiar type problems which it helped to complicate. The tire industry is a mature industry, had overcapacity, had also started with new technology which are required in the industry to change the way it produces tires and gets involved in a lot of capital expenditures. All these problems were complicated by inflation and overcapacity."

The problem of overcapacity in the tire industry has generated a lot of competition, price wise. Another manager described the industry thus:

"The tire industry is a very competitive, very reactive, very price conscious business. Everyone is always reacting to someone else's prices. The competition is even more severe because there are

still some overcapacity in the industry which creates problems."

Price uncertainty, arising out of the crisis of overcapacity has put a lot of pressure on companies in the industry, especially in view of the fact that companies can do little or nothing to expand their market shares. Price and quality competition in the industry has reached new heights resulting in the closure of many plants. Asked to describe the main problem facing the industry and the strategy to deal with it a manager put it this way:

"Price, quality and maintenance of market share. To survive the strategy is essentially to produce where a company can at some point develop an appropriate return on investment. We don't always accomplish that but we have also tried to rationalize our products on a North American basis. The strategy has been to win an appropriate market share that we can service appropriately and get an appropriate return on investment."

The manufacturing process or product development is based on polymer science, mathematics and physics of tire. Because of continuing demand for high quality tires many of the companies have research and development centres. Work carried out at such centres ranges from basic research on rubber and other raw materials to the study of tire dynamics and the design of high technology, automated process. Asked to discuss the frequency with which changes are introduced in the production process one manager said:

"The problem with this industry is probably that the production process has not changed as much as it should. The level of technology, innovation and

automation going on in the industry is probably less than in other industries. It is a very inbred industry. Most of the major companies have their headquarters in Ohio and work with common equipment suppliers. It is only in the last few years that European manufacturers have started to go different ways in terms of production technology."

Although scientific knowledge is peculiar and specialized it is well-known within the industry and therefore there is certainty in the acquisition of relevant scientific knowledge. Another manager underlined this certainty by saying:

"As far as changes in actual technology, that all of a sudden somebody has a tire that you don't have is unusual and it doesn't happen. We have Rand D people who do long range planning and therefore chances of being caught completely offguard by completely new planning or technology is next to zero. The danger is where you do not do adequate Rand D to keep up with technology. We are into radial tires now and do not intend going into a completely new kind of tire for a long time."

Still on the issue of technological stability and certainty of scientific knowledge, another manager pointed out that:

"Technology is much more long term and stable than in the electronics industry. It is changing but equally for all suppliers. The new technology is available to all and whether a company chooses to invest in that is a different issue but there is very little in the way of proprietary technology, that will give one supplier advantage over another."

From these comments it is evident that the managers interviewed perceive the tire industry as being characterised by a stable technological process and certainty in the acquisition of scientific

information. The area of most uncertainty is the market characterised as it is by overcapacity, price and quality competition. The impact of such a situation for companies in this industry is not only to maintain market share but to earn acceptable return on investment. The impact of such a market generated uncertainty on the form and content of participation will be explored in the next chapter.

Management Philosophy

The managerial philosophy at Firestone is underpinned by a concern to (a) be a low-cost, cost effective and quality tire manufacturer and (b) earn a reasonable return on investment. To achieve these goals and thereby enhance the company's competitive edge the plant's managerial philosophy can be characterized as neo-scientific management. In a discussion of theories of management, Miles²¹ indicated that this tradition of management is predicated upon the assumptions that (a) work is inherently distasteful to most people; (b) what workers do is less important than what they earn for doing it and (c) few workers can or want to exercise discretion at work. Following from these assumptions the management's task is (a) establish detailed work routines and procedures; (b) break work down into simple, repetitive easily learned operations and (c) close supervision. The application of these principles at Firestone Hamilton plant has resulted in a high degree of technocratic management and a bureaucratized organization.

The high degree of technocratic management is evident in the extensive use of optimization techniques in the plant with a view to increasing efficiency. Management science techniques are used to determine not only the effectiveness of the builder but also to run statistical process control. In making decisions relating to the plant's long term strategy strong emphasis is placed on the contribution of individuals with the relevant technical background. In the view of one of the managers:

"From a manufacturing point of view. The plant is organized along normal bureaucratic lines. However, when problems arise they are delegated to our staff departments or line authority with the necessary technical background. Occasionally when the problems cannot be handled by our staff we consult specialists."

The management philosophy also emphasizes a low degree of organicity. The role of various departments and individual activities within these departments are clearly structured and as a result there is a clear chain of authority culminating in the position of plant manager. Within this setting there is a preoccupation with ensuring that both line and staff personnel stick as closely as possible to their formal job descriptions. To underline management's belief in a clearly structured organization a manager remarked that:

"I had a feeling that distinction between foremen and managers were becoming blurred and I have taken steps to emphasize to each other what their roles are. For instance, I hold supervisors responsible for looking after their people and being leader to them, foremen responsible for running statistical process control

within the department and hold the manager responsible for telling me how the department will be different in say five years from now."

However, as is fashionable these days, this essentially scientific management philosophy has been provided a humanistic participative face hence our referring to the management philosophy at Firestone as neo-scientific management. The participative component of the style of management is couched in Maslowian terms thus:

"To create an environment that values trust and human dignity and provide the opportunity for personal development and self-fulfillment in the attainment of organizational goals."²²

The attainment of the above objective is through open communication between management and employees in finding solutions to the plant's problems. In an unpublished paper by one of the managers on the plant's management style he pointed out that:

"The strategy developed is necessarily based on establishing proper lines of communication. We have to talk and get people to listen. More importantly, management must be prepared to listen because ultimately any business which is to survive has to accept the fact that it can only do so if it is allowed to by its people."²³

This therefore means employee involvement in decision-making because

"We need to recognize that most of the best ideas for work improvement and cost reduction come from the employees who perform the work on a regular basis. On the basis of this employees have the right to offer suggestions and also to participate in making decisions in this regard."²⁴

A management style that emphasizes a high degree of technocracy, low degree of organicity and a humane participative style as does Firestone's has been labelled neo-scientific by Khandwalla. This he defines as being 'characterised by a heavy reliance on sophisticated long range planning, modern management techniques like operations research, participative humane management and a fair degree of emphasis on structuring managerial and staff roles, activities and relationships.'²⁵

The Structures and Content of Participation at Firestone Hamilton Plant

Background:

The Firestone Organization and therefore the Hamilton Plant like most of the plants/companies within the tire industry were faced with difficult times starting in the late seventies. The unfavourable business conditions were engendered by high inflation rates, high interest rates and a down turn in the auto industry. In addition to these general problems facing the tire industry, Firestone's problems were exacerbated by a recall of defective radial 500 tires which proved expensive in terms of money and reputation. Against this background, John Nevin was appointed President and Chief Executive Officer in 1979/80 with the responsibility of making the organization cost-effective. As a starting point he closed down non-profitable plants. For example, in Canada, two plants in Calgary and Whitby were shut down.

Being an old plant producing every conceivable tire specification the Hamilton plant was unprofitable and clearly a potential shutdown

victim. To escape this fate the plant management came up with a 3 point survival programme which included (a) conversion of plant to seven-day four-shift operation; (b) introduction of improved productivity and cost saving measures like storyboarding and just-in-time and (c) ticket rationalization, that is to say, instead of being a producer of every tire specification, the plant opted to specialize - that is to say, produce only a limited range of tire specifications. Participatory structures at the work-level are components of this survival programme.

Work-Level Participation:

Storyboarding:

As one of the Hamilton Plant's approach to employee involvement, storyboarding is a problem identification and solving process. In the words of the co-ordinator "storyboarding is problem solving or communication approach through people involvement. It is basically a visual system for analyzing and/or planning a project." The objectives of the process are (a) to get employees involved in the identification and solution of problems; (b) to improve communication and to emphasize participatory management philosophy and (c) to enhance the plant's competitive position.

Mode of Operation:

The process takes the form of weekly informal departmental meetings. Each meeting requires at least ten production workers and a maximum of five management representatives, normally from the same

department as the production workers. These meetings are held on company time away from the plant.

To start the meeting the departmental manager or his representative will outline the problems facing the department and the expected contribution of the department towards realizing the plant's mandate. This generally provides the framework for issues to be discussed. Prior to the meeting the co-ordinator meets with the management team in the departments to establish their list of priorities. These priorities as a rule are concise and focus on an attainable objective. A broad objective for a meeting could be '15% Improved Productivity', and related subheadings could be (a) 'How to Reduce Downtime'; (b) 'Reduce Waste and Improve Quality' and (c) 'Increased Speeds'.

During this roundtable meeting each production worker is offered coloured index cards and a marker. Under each of the subheadings participants are supposed to write out an idea per card. These cards are then handed over to the meeting co-ordinator who in turn pins them on a board. This process is repeated for all the subtitles with an employee making as many suggestions as he possibly could.

The next step is 'objective countering', during which each idea is exhaustively discussed and if the group agrees on its relevance it is allowed to be on the board. Otherwise, it is scrapped. The meeting ends after each idea had been discussed and 'objectively countered'. Normally, storyboard meetings could take up to ninety minutes.

After the meeting the co-ordinator with the help of the management team assigns each card to the support or functional

department responsible for rectifying any particular problem. The progress of a meeting is monitored on a briefing board conspicuously displayed in each department. These boards have three headings viz: (a) 'To do'; (b) 'Doing' and (c) 'Done'. At the group's next storyboard meeting they are formally briefed on the outcome and status of issues raised at the previous meeting.

As an informal process of ensuring employee involvement in the plant, storyboarding does not deal with issues covered under the collective bargaining agreement and secondly, only clock or production workers are involved in storyboarding.

Just-in-Time or Tires on Demand:

As a task-centred participatory scheme, Just-in-time (JIT) has its origins in Japanese manufacturing techniques and aims at elimination of waste in the production process by deliberate involvement of employees. Saipe and Schonberger²⁶ have observed that JIT permits manufacturing personnel to return to the basics which include: (a) mixed assembly to permit more stable production schedules and to minimize finished goods in inventories; (b) set-up time reduction to permit small lot production and shorten lead times; (c) product flow layouts to eliminate work in process stocks, reduce space requirements lead times and (d) quality at the source to reduce defect rates and related scrap and re-work costs. In the words of Schonberger:

"The JIT idea is simple" Produce and deliver finished goods, just in time to be sold; sub-assemblies just in time to be assembled into finished

products, fabricated parts just in time to go into sub-assemblies and purchased materials just in time to be transformed into fabricated parts."²⁷

At the Hamilton plant, JIT has been adopted as a mechanism for improving productivity and fostering employee participation in work-related decisions. Tires on Demand (TOD) is the plant's approach to implementing JIT. The scheme operates between the tireroom and curing department although there are plans to extend it to other departments. As practised at the Hamilton plant TOD has five interrelated components collectively contribute to achieving the objective of waste elimination.

Rapid Change Team:

A manufacturing process geared towards assembling various components and equipments as is characteristic of mixed production requires more than one machine type. At the Hamilton plant, there are various machine types for the different tire specifications. However, since not all tire specifications will be in high demand at any one period there is always the need to move tire specifications to machines which were not specifically designed for that make of tire. This then requires altering the machine's specifications to accommodate another tire make which can be time consuming. To eliminate this problem and change machine specification within the minimum period, the rapid change team comprising five employees on each team effects such mechanical changes. Members of the team have been trained to effect set up on machines and to be constantly prepared for up-coming changes.

Preventive Maintenance:

The object of this component is to eliminate waste and ensure that production is carried on smoothly. In order to achieve the objectives of TOD the plant requires constant maintenance of critical equipment. A crew of servicemen are delegated the responsibility of regularly checking the machines and routinely servicing them. They identify potential breakdowns which are rectified before they are problematic enough to cause hold-ups in production. Preventive maintenance then serves to avert unscheduled breakdowns in machines.

Kanban:

The heart of the TOD scheme is the use of kanban or cards. Since the objective is to produce just enough of the right tires at the right time, the use of kanban or cards helps the curing department to inform the tireroom how many tires of a particular make they can handle at any particular time. The use of kanban or cards is then perceived as a simplified scheduling system. The essence of kanban is that:

'Instead of 'Pushing' a multitude of parts through the manufacturing process to the completion, you 'Pull' only the necessary part through the system.'²⁸

Group Technology:

Though this process the plant has worked to standardize its equipment so that change time can be reduced. Furthermore, standardization of equipment has resulted in the worker dealing with the same

process thereby enhancing his/her dexterity in that aspect of the production process. At the Hamilton plant group technology is used to the extent that employees in the two departments have been provided the opportunity through standardization to be adept at working on any machine in the department.

Employee Participation:

Whilst TOD is aimed at eliminating waste, ensuring efficiency and quality it also promotes team work and employee involvement in the form of identification, solution of problems and scheduling. TOD promotes more interaction between workers. For example, in designing group technology the industrial engineering department needs to have input from the shopfloor employees so that the design is not only from an efficiency point of view but also from the point of view of human comfort. Furthermore, rapid change can only be performed by the operator and therefore his ideas are solicited on how to effect such changes as quickly as possible. Schonberger has noted that JIT (TOD) does not only provide shopfloor employees the opportunity to be more involved in their work but also (a) generate ideas for controlling defects; (b) ideas for improving JIT (TOD) delivery performance and (c) ideas for cutting set-up time.²⁹

Together these components form the nucleus of TOD at the Hamilton plant.

Organization-Level Participation:

Employee participation at this level is representative and performed basically, by the union. Like most North American companies, participation is achieved through the process of enterprise collective bargaining.

History of the Plant's Union:

All the 1,400 production workers at the plant are unionised and belong to the United Rubber, Cork, Linoleum and Plastic Workers of America - an affiliate of AFL-CIO-CLC. Local 113 was chartered in 1937 but was not certified till 1944. Its first collective agreement was signed in 1945. Since its certification the union has participated in three strikes - 1946, 1952 and 1974. The 1974 strike lasted eight months and four days ending only with the successful negotiation of a cost of living allowance.

Organizational Structure

Being a member of an international and district union authority is focused on three levels - local, district and international. The local is however, very autonomous. It has the conventional set of officers - president, vice-president, secretary and treasurer, who collectively form the executive. There is also an executive board which comprises the executive committee and seven members at large. However, down the hierarchy are divisional chairmen who represent the various departments and come directly under the vice-president. Under the

divisional chairmen are the union stewards who collectively form the steward council.

The relationship between the local and the other two levels are clearly spelt out in the constitution. The district performs a resource function for the local by way of providing field representatives to assist the local in for example, its educational function. The international has the responsibility for upholding the union constitution, provides research and legal assistance and financial assistance during strikes or lock-outs. The local however, has complete autonomy with regard to determining priorities in negotiations and the routine operation of the local consistent with its laws.

Collective Bargaining as Organizational Level Participation:

Collective bargaining at the Hamilton plant falls within the prescription of the Canadian Industrial Relations System. Production workers comprise the main bargaining unit whilst the union local serves as the bargaining agent. The duration of an agreement is three years.

When the agreement nears its expiration the union executive apprises the management of the plant of its intention to cancel the previous agreement and its desire to negotiate a new one. To arrive at issues for bargaining and setting of priorities the union executive invites submissions from the general membership, executive board and stewards. All submissions are correlated by the union executive and recommendations made at a special membership meeting. The general membership then elects a negotiating team. Once the issues and

priorities have been formalized the negotiating committee comprising eight unionised employees presents its bargaining demands to the management team at the initial meeting.

The next step is for the management team to take time to scrutinize the demands of the union and to develop counter proposals and to initiate their own demands. At the outset the union negotiating team puts forward a long list of demands though it generally tends to be narrowed down as negotiation proceeds. Craig has pointed out that:

"Through the negotiation process the initial number of demands may be gradually narrowed down as each party gains a better understanding of the other's true position. Eventually, this will lead to the discovery of a contract zone; that is some intermediary area between the two sets of demands wherein both parties would prefer to settle rather than undertake a strike or lock-out."³⁰

In accordance with the prescription of Canadian industrial relations once the two parties are in agreement a tentative collective agreement is presented to the general union membership for ratification. If the union membership votes to accept the agreement it is eventually signed and regulates the conditions under which the unionised employees work for three years. Through the collective bargaining process and its gradual expansion to cover not only such traditional areas as wages, pensions, general improvement of working conditions but also severance and separation agreement, safety and cost of living allowance, unionised employees have been provided a mechanism through which to influence otherwise unilateral managerial decisions.

General Personnel Policies:Grievance Procedure:

The first step is for the aggrieved employee to discuss the problem with his supervisor. If it is not resolved the union steward steps in to help the parties reach a compromise. This failing, the aggrieved employee and the supervisor fill out a fact sheet which outlines the cause of the grievance. At the next step the grievance is formally written and a meeting is held between the departmental manager and a union committeeman. A representative from the Industrial Relations Department can be present simply to take down minutes. If the issue is still not resolved the aggrieved employee is represented by the union president, recording secretary, committeeman who meet with the representatives from the Industrial Department and the departmental manager. At this point the company/plant has fifteen days to respond in a written form and if the union is not satisfied the case goes to arbitration. The outcome of the decision of the Arbitration Board is legally binding on both parties.

Tire Room Training Program:

This program has been developed with the objective of creating a more highly trained, productive, cost efficient workforce within the framework of quality, safety and costs. Candidates undergoing this program include new employees, inexperienced builders recently transferred to the tireroom and experienced builders transferred to a new machine. The content and duration of the program are dependent on

category of candidates being trained. For example, established builders undergo the program for two weeks and areas of concentration include safety and building procedures whilst for new builders it might take up to three months and instruction focuses on safety, job description, building procedures, quality and set-ups. The program entails theoretical as well as practical on the job instruction. The effectiveness of each candidate is monitored by the instructor with the aid of worksheets and effectiveness graphs.

Procedures and Policies for Hiring and Internal Transfer:

It is the policy of the Hamilton plant to fill vacancies first by finding qualified candidates within the plant. Notices of vacancies are posted on bulletin boards in the plant. However, if there are no qualified candidates the position is advertised. Whereas internal candidates are interviewed by the departmental manager who makes recommendation to the employment office, the external candidate goes through a series of interviews. Such candidates are first handled by the Personnel Manager's assistant who submits a list of qualified candidates to a panel of interviewers including the Personnel Manager, Departmental Manager and a foreman. The most qualified is hired and goes through a series of orientations to familiarize him/herself with the plant. After a three-month probationary period the new employee assumes a permanent status.

Internal transfers are also permitted. If for whatever reason an employee wishes to work in another department a transfer letter must be

submitted to the employment office. If there is an opening and the transfer is effected the employee's plant seniority becomes departmental seniority after three months continuous service in the new department. During this three-month period the employee's seniority applies in the department from which he has transferred. However, if after the probationary period the employee should be found unsuitable he/she could revert to the previous job but in a junior position.

Summary:

In this chapter we have provided a descriptive account of the nature of business, techno-economic environment, management philosophy and practices and the structural features of participation in the two companies. The table below provides a summary comparison between the two companies along dimensions discussed in the body of the chapter.

In the next chapter we shall use selected decisions, how they are made and where they are made in the organizational hierarchy as indicated by a key organizational member in each company to establish the form, content and level of employee involvement. Supplemented with our discussion of structural participation the explanatory framework will be used to offer a postdictive explanation of variation in the form and content of employee involvement in the two companies.

Table 3: A Summary of Comparison Between the Two Companies

Dimensions	The Group at Cox	Firestone
Size	Small-sized	Large
Main Product	Dental Cabinetry and Services	Tire
Technology	Non-routine	Routine
Source of Uncertainty	Market-generated	Market-generated
Management Philosophy	Democratic	Neo-Scientific
Ownership & Control	Wholly-Owned	Subsidiary
Unionization	No	Yes
Structure of Participation		
Work-Level	Employee Self-Management	Storyboarding
	Group Autonomy	Just-in-Time
Organizational Level	Town Hall Meetings	Collective
	Right to Share	Bargaining

FOOTNOTES

1. The Group at Cox was among a number of companies studied by Nightingale and his findings are reported in 'Workplace Democracy: An Inquiry Into Employee Participation in Canadian Work Organizations' (Toronto: University of Toronto Press, 1982). Nightingale's study focused on the structure, process and outcomes of participation but because it was a large scale research he could not get close enough to observe fully the internal dynamics of participation at The Group at Cox. Furthermore, this study differs from his in that it seeks to explore the factors that account for variation in the form and content of participation.
2. Adapted from Gannon, M., Organizational Behavior: A Managerial and Organizational Perspective (Boston: Little, Brown and Company, 1979), pp. 34-35.
3. Southam, W., Memo to employees at The Group at Cox, May 5th, 1971.
4. See Maslow, A., 'Theory of Human Motivation', Psychological Review, vol. 50, 1943, pp. 370-396.
5. Working Together at Cox Papers, 1974, p. 2.
6. Southam, W., Memo to employees at The Group at Cox, 1970, June 8th.
7. Working Together at Cox Papers, 1973, p. 4.
8. Working Together Papers, 1974, p. 5.
9. Ibid, p. 8.
10. Khandwalla, P. 'Some Top Management Styles, Their Context and Performance' Organization and Administrative Sciences, 1976/77, Vol. 7. pp. 25-26.
11. Manz, C. and Sims, H., "Self-Management or a Substitute for Leadership: A Social Learning Theory Perspective," Academy of Management Review, 1980, vol. 5, p. 363.
12. Working Together at Cox Papers, 1970, p. 3.

13. The Cox Working Together Papers on The Committee for The Success of the Person, 1981/82, p. 1.
14. Ibid, p. 2.
15. Southam, W., Memo to employees at The Group at Cox, 1974, January, 4th.
16. Bernstein, P., Workplace Democratization: Its Internal Dynamics (Kent, Ohio: Kent State University Press, 1976).
17. Southam, W., Memo to Employees at The Group at Cox, 1979, November.
18. The Cox Working Together Paper on Right to Share Meetings, 1984, p. 1.
19. Ibid, p. 1.
20. Firestone Report to Shareholders, 1985, June 3rd.
21. Adapted from Gannon, M., op. cit., pp. 34-35.
22. Firestone Canada Corporate Philosophy, Unpublished and undated.
23. Tompkins, T., "Humanistic Participative Management - The Key to Increased Productivity and Employee Satisfaction" Unpublished and Undated paper, p. 3.
24. Interview with Tompkins, T., 1985, January 21st.
25. Khandwalla, op. cit., pp. 24-25.
26. Saipe, A. and Schonberger, R., "Just-in-Time Production: What Are you Waiting For?" Industrial Management, 1984, September , p. 20.
27. Schonberger, R., Japanese Manufacturing Techniques: Nine Hidden Lessons in Simplicity (New York: The Free Press, (1982), p. 16.
28. Hamilton Tire News, 1984, December, p. 2.
29. Schonberger, op. cit., p. 28.
30. Craig, A.W.J., The System of Industrial Relations in Canada (Scarborough, Ontario: Prentice-Hall, 1983), p. 161.

CHAPTER FIVE

VARIATION IN PARTICIPATORY STRUCTURES: TOWARDS AN EXPLANATION

Introduction

The main research question to be dealt with in this chapter is: "Why does workers' participation in management take certain forms and cover certain areas of management?"¹ We shall use the explanatory framework proposed in the second chapter to explore the extent to which the structural variables in the framework exerted definite pressures on the one hand, and limitations on the other to shape the form and content of participation in the two companies. Propositions specifying how these structural variables can shape the form and content of participation based on these companies will be presented. It may be noted that in countries, such as Canada, where there is no legal prescription that provides a blueprint for the design and implementation of a worker participation scheme, it is our contention that variations observed in this scheme may have been conditioned by the diverse forces and constraints operating on the organization.

Form and Content of Participation in the Two Companies

In addition to a structural description of participation in the two companies, the extent to which workers have been involved in the decision-making process was ascertained by having a key organizational

member in each company indicate how selected managerial decisions are made, and where they are made in the organizational hierarchy. Data from these two sources not only provided a static description of participation but also its dynamics as it relates to the form and content of participation in the two companies. Consistent with our definition of participation which emphasizes employee influence, we were interested in the extent to which the traditional bureaucratic structure has been modified in the two companies and the structures through which employee influence vis-a-vis selected decisional issues are channelled. The table below illustrates how the selected decisions are formulated and the level within the organizational hierarchy where they are formulated. The forms of employee involvement in the selected decisions ranged from::

- A = Employees have no influence in our decision;
- B = We would not consult but would consider possible reaction before reaching a decision;
- C = We would consult and probably adjust our decision in the light of their view but the decision will be ours;
- D = We would negotiate but if unsuccessful would put our decision into effect;
- E = We would negotiate and would not proceed until there was an agreement;
- F = This is a matter for which we would accept what our employees want to do.²

The mode of involvement therefore ranged from management discretion (A - C); joint decision-making (D-E); and employee discretion (F). The levels of decision-making ranged from A = shopfloor or local level; B = medium or workgroup level and C = distant or organizational

Table 4: Form and Content of Participation in the Two Companies
Indicated by How and Where Selected Decisions are Made in the
Organizational Hierarchy

DECISIONAL ISSUE	COMPANY			
	THE GROUP AT COX		FIRESTONE	
	Mode of Involvement	Level of Decision	Mode of Involvement	Level of Decision
<u>a) Economic</u>				
1. Closures and/or Mergers	C	C	A	C
2. Capital Investment	A	C	C	C
3. Type of Manufacturing Equipment to buy	C	C	A	C
4. Sale of Stock in Company	A	C	A	C
5. Determine Organizational Direction and Volume of Output	E	C	A	C
<u>b) Work/Social</u>				
6. Task Assignment	D	B	E	A-B
7. Deciding on how Employee Performs His/Her Job	F	A-B	C	A
8. Determine Pace of Work	F	A-B	C	A
9. Working Hours	E	A-B	C	A-B
10. Wage Levels	C	C	E	A-B
11. Improvement in Productivity	E	A-B	E	B
12. Changing lay-out of Employee's Job	F	A-B	D	A-B
<u>c) Personnel</u>				
13. Dismissals and Grievances	E	A-B	E	A-B
14. Hiring and Selection	E	A-B	A	B
15. Transfer of Employees	E	A-B	E	A-B
16. Training Course and Safety Procedures	E	A-B	E	A-B
17. Deciding on Major Changes in the workforce	E	C	E	B-C

level. In the case of Firestone almost all the decisions indicated 'C' are made at the Head Office in Akron, Ohio.

It is apparent from the table that although the two companies have different structures of workers' participation, they both illustrate to a varying degree the involvement modes of managerial discretion, joint decision-making and employee discretion as shown from the content of participation. At Firestone, the traditional bureaucratic structure has not been substantially altered in spite of such worker involvement schemes as storyboarding, just-in-time and collective bargaining. Most of the decisions of long term economic nature such as closures or mergers and capital investments are subject to management discretion, mostly at the head office. Work/social conditions and personnel decisions are either decided jointly or handled by the plant management. The area of most worker involvement is in such decisions as working conditions, dismissals and grievances and wage levels through the collective bargaining process. Employee discretion or involvement in work-related issues in spite of such job-related involvement schemes as just-in-time and storyboarding is very minimal. Such work-related decisions as task assignment, determining how the job is done and pace of work have all been pre-empted by the technological process and whatever discretion there might be is technologically constrained. Just-in-time and storyboarding therefore provide opportunities for involvement in issues which are peripheral to the job, such as suggestions on how to improve productivity and tire quality, elimination of waste and problem identification and solving.

The Group at Cox, on the other hand, has gone a long way to debureaucratize its structure as indicated by the structure of decision-making (mode of involvement). However, like Firestone, it also displays the trilogy of management discretion, joint decision-making and employee discretion in various decisions. Long term economic decisions in spite of the 'Town Hall' and 'Right to Share' meetings are handled by the President in consultation with the other members of the management committee. Work/social conditions and personnel decisions are either determined solely by employees or in consultation with management. The structures of employee self-management, group autonomy, 'participatory voting on pay' and 'committee for the success of the person' have provided employees a lot of involvement in such decisions.

Work/social conditions and personnel decisions subject to joint decision-making include dismissals and grievances, wage levels, personnel equipment and working conditions. However, the area of most employee involvement cover such work-related decisions as task assignment, pace of work, working hours and decisions on how an employee performs his/her job. Coupled with the nature of tasks performed by employees, such work-related participatory structures as employee self-management and group autonomy have provided employees an unusual degree of autonomy on the shopfloor.

In the absence of a blueprint the form and content of participation in the two companies are different. The objective of this chapter is to explore why this is so using our explanatory framework.

Size and The Form and Content of Participation

The manufacture of tires involves a series of distinct but related steps each of which has been departmentalized and can be generally divided into production and staff/support departments. Production departments include all the stock preparation departments, the tireroom and curing department. Each department exhibits a line authority consisting of a team of supervisors, foremen and a manager all of whom come under the production manager. Beside the production departments are the service or staff departments like Industrial Engineering, Industrial Relations, Accounts and Plant Engineering which also encompasses maintenance. The managers of these departments and the production manager together form a second-tier level of management under the plant manager. The plant then illustrates a pyramidal authority structure which can also be interpreted as a pyramid of knowledge to ensure not only control but co-ordination of the plant's activities. The first-tier of management, that is production department managers have clearly defined tasks which implicitly define when they should defer to their immediate superior. In the view of key organizational members the departmentalised organizational structure is a direct response to the need to effectively control all the different kinds of work necessary in tire manufacture.

These diverse activities call for a large workforce most of whom are production workers mainly because of the nature of the tire manufacturing process and the expensive capital investment which makes it expedient to work it around the clock. Thus, as Woodward³ found in her

study, nature of product and the corresponding technology is linked not only to the labour structure but also the management group. The relationship between such a large force of production workers and management has also been complicated by the application of time and motion studies to establish a production standard and the frequent attempts to adjust the standard. Furthermore, in any work organization, decisions relating to the conditions of employment must be made and the importance of such decisions as allocation and distribution of work and fringe benefits tend to occupy a pivotal place in workplace relations when a large number of people work together.

However, the size of the workforce given by a ratio of about 12:1 direct to indirect employees, has made it difficult or even impossible for the management to deal with employees on an individual basis. The Canadian Industrial Relations legislation recognizes the right of employees to join unions and because of that, the production workers, hourly rated and piece-work alike, have unionized to influence such areas of organizational decision-making as wages, fringe benefits, occupational health and safety and dismissals and grievances through the collective bargaining process. Thus, although the nature of activities related to tire manufacturing and corresponding technology indirectly determined the size and structure of the labour force, it was the size of the labour force that exerted definite pressures in the direction of representative participation.

The Group at Cox, on the other hand, is involved in the production of dental work stations (cabinets) and provision of services to the dentist. This has led to the divisionalization of the company into a products and professional services groups. The work of the professional services group, tailored to meet the specific demands of the dentist client, is so specialized that only a core of skilled employees like designers and dental hygienists are needed whilst less skillful roles have been delegated to employees who have learnt their roles on the job, for example, an employee responsible for planning seminars. The work of the products group can be described as small batch production and the standardized products are customer-ordered. The low level of mechanization and demand for craftsmanship in the core activities has meant the employment of such skilled employees as cabinet makers and a machinist.

Thus, because of the nature of the company's business and the associated technology, the labour force needed is small and so is the size of the management team averaging out to employee-management ratio of 17:2. To co-ordinate its activities, the company developed a loose structure with minimal definition of roles although it was common knowledge who embodied management. The President or the vice-president has the power to discipline or initiate major policies on behalf of the company. In such a loosely structured company, problems arising from working together were resolved within face to face personal relationships as both the president and his vice maintain a short sleeve relationship with employees and interact quite frequently.

However, when demand for the company's products rose in the mid-seventies, additional workforce was needed and with the employment of more employees the company's workforce increased to seventy. Although it was still small compared to Firestone, it did create problems for personal contact and mutual discussion with the entire workforce. To overcome these problems and establish healthy workplace relations, the company adopted a representative system as a form of indirect participation. Each of the four groups at that time (development, products, services and programs) elected a representative whose function was akin to a union steward. These representatives met with their constituents to solicit their views on social and personnel problems which were presented to management during the representative council meeting.

However, with a flattening market, and consequently a drop in the number of employees to eighteen during the time of the research, the size of the workforce was small enough to warrant a dismantling of the representative system and in its place direct democratic forms of participation were implemented at the organizational level. The reduction in the size of the workforce was done over time by the president in consultation with the affected employees. Employee participation is now being effected at this level through such mechanisms as 'Town Hall' and 'Right to Share' meetings which emphasize collective and consensual decision-making.

From the preceding discussion, we have shown how the nature of the companies' products and the accompanying manufacturing processes do influence the nature and size of the labour force and the resulting

system for co-ordinating and controlling work activities. However, once the size of the labour force has been established, in large companies such as the Firestone Hamilton plant, the large number of production workers makes it almost impossible to deal with workers individually. This is made even more so when as a result of the division of labour employees have different interests. In such a situation, indirect or representative participation through trade unions and collective bargaining (if the industrial relations legislation provides for that) may become necessary to settle work/social and personnel problems. Size of company then provides a structural constraint or opportunity and the extent to which it influences the form of participation is ultimately shaped by the style of management. For example, the adoption of collective bargaining at Firestone Hamilton plant and a representative council at The Group at Cox when they had size problems. Our exploratory proposition linking size and form and content of participation is that:

In large bureaucratized organizations with large work-units, the division of labour results in a differentiated workforce and their different interests create a potential to emphasize indirect/representational employee involvement in decision-making (formalized industrial relations). In small organizations, in contrast, where work-units are small, the relatively less differentiated workforce encourages a less diversified interest among the workforce and furthermore, the closer contact between workers and management encourage direct democratic forms.

Nature of Product, Technological System and the Form and Content of Participation

In addition to influencing the size and structure of the labour force, the management group and the resulting organization structure, the nature of product and technology as Clarke et al noted "...can determine role-content and role-means [and this] becomes important in relation to the discussion of those forms of horizontal participation that attempt to widen the scope of task-based decisions by workers."*

At the Hamilton Firestone plant, tirebuilding involves a combination of various stocks obtained from the stock preparation departments on a semi-automatic tire assembly machine. At the start of the shift the builder sets up his machine, that is to say, he ensures that the machine is in good condition and the various stocks have been supplied. The tirebuilding process starts with the tirebuilder manually securing two beads or more depending on the tire specification being built on the two rings of the tirebuilding drum. He then hits the start button and the six-segment collapsed drum expands into a full cylinder or drum and then manually applies a sticky substance called cement to the edges of the drum. This helps to keep the various stock on the drum whilst ensuring at the same time that the semi-finished tire could be manually pulled from the drum.

The builder then moves to the next step in tirebuilding by first spreading the inner liner on the drum and then assembles the first group of plies in a criss-cross manner which not only creates the bias but reinforces the finished product. The number of plies assembled depends

on the tire specification being built, for example, a four ply tire means four plies would be assembled on the drum in a criss-cross manner. The builder then depresses the pedal at the foot of the tirebuilding drum which enables the drum to spin and in the process, the ply automatically envelopes the beads at both ends of the drum into a circle such that the beads become sandwiched between the plies. The builder then steps on the pedal which transmits a signal through the electrical programmable controller to the stitches (metal wheels on both sides of the drum) and on coming into contact with the drum squeeze air out of the drum whilst rotating at high speed. This helps to prevent gauging whilst enhancing the sticky properties of the rubber.

The builder then manually applies the tread on the middle portion of the tirebuilding drum which serves as the outer cover of the tire and a cushion for the plies. The pedal is then depressed, signalling the next automatic step whereby the drum rotates at high speed during the tread stitching operation. During this operation, the builder secures two chopsticks (iron-bars) held in both hands and stuck in-between the ply and the drum at both ends of the drum to push out any trapped air and to free the innermost ply from the tread sidewalls. Whilst the drum is still rotating at high speed the builder walks around the machine and manually lifts the tread and places it on the tread tray on his machine for the next tire. After the tread stitching, the drum stops rotating, automatically collapses and the tire, looking like a barrel with open ends, is taken off the drum and placed on a conveyor to the cure room. On the average, most tire specifications require about six minutes to

complete the operation. The builder repeats the process several times during the shift unless the machine breaks down, or he takes a break or has built the required standard. On each tire is a sticker which not only gives the builder a count of tires built but also helps trace the builder of a defective tire.

From the preceding discussion of the tirebuilding process it is evident that tirebuilding is a very individualized and standardized process. For this reason, there is little uncertainty and problem solving is structured. The nature of the product (tires) and the resulting technology have jointly pre-empted most issues that could be subject to worker discretion with the exception of work pace and work quality which is determined by an equal mixture of raw materials and the builder. Such a routine technology did exert definite pressures in ensuring that any scheme of direct participation on the shopfloor leaves intact the conventional organization of work. For instance, supervisors are still responsible for initialling the tirebuilding's activity report which records the machine number, number and duration of downtimes and number of tires built (count). Storyboarding and Just-in-time as forms of direct participation are therefore responses to the strategic choice of management within the structural constraint caused by such a standardized product and the corresponding routine technology. The content of participation then is limited to issues peripheral to the job such as 'inconsistent cycle time' (i.e. bead set and tread.stitch), 'oil leak in and around machine' and 'compensators needing new brakes' all of which fall under problem identification and solving.

The Group at Cox on the other hand, is involved in a line of work different from Firestone's and so is the technological process. Within the products group, cabinet or work station manufacture involves two distinct phases both emphasizing some element of craftsmanship. The work of the group for a specified period is indicated on a production schedule posted on a board at the entrance to the plant on which is outlined what each member of the group is required to do. Task allocation is based on the skills of the employees. The three cabinet makers are responsible for the wooden framework of the cabinet or work station using hand operated machines. The pre-laminated board which is the main raw material is received from a nearby company and one of the cabinet makers using a light pencil marks how the board is to be cut. He then places the board on the surface of a crudely mechanized machine and manoeuvres the board around the saw to ensure that the board is cut into predetermined shapes and sizes for the various components of the wooden framework. The cut pieces are then arranged according to size and shape and, again using a light pencil, marks are made to indicate where grooves would need to be cut.

Using another 'crudely' mechanized machine a cabinet maker places the cut pieces, one at a time, at the edge of the machine and like the first process, a piston-like edge is pressed and the pieces are manually manoeuvred to cut grooves in them. The next step is to apply arborite to the edges of the pieces, a process called cabinetry edging. This is a manual operation whereby a glue for wooden products is applied extensively to the edges of the cut piece by squeezing it from a

container. The arborite, cut to match the width of the edge is gently pressed to the edge using a hammer-like tool. Once the essential phases are completed the wooden parts are then pieced together to form shelves, drawers and counters, another manual operation, to form the wooden framework of the cabinet or workstation.

The final phase of the work of the products group is the assembly of electrical and plumbing parts for installation on the wooden framework. Some parts like knobs are made in the plant by a machinist using simple mechanized equipment. Generally, the installation of both electrical and plumbing parts is a manual process performed with the aid of such simple tools as screwdriver and hammer. Although the work carried out in this group involves some craftsmanship it is routine and involves observable rhythms. Furthermore, the job requires the individual to constantly repeat the same actions and a lot of serial interdependence, for example cabinetry edging, depends on the preceding worker cutting grooves in the pieces.

The work performed by the professional services group on the other hand, is different and so is the technology. The work done by this group, the propagation of a preventive philosophy of dental practice and the design of offices supportive of this philosophy, can be described as knowledge work. Through a series of classroom-like instruction techniques, the group helps the dentist client to appreciate changes going on in the marketplace in terms of service mix. Against such a background, the client is offered some leads that could help him/her cope with these changes 'So that they can look at their practice as

a business instead of just being some sort of professional practice that falls out of the sky.'

Changes in the marketplace culminating in the shift from restorative to preventive dentistry means additional staff and for that reason the members of the professional group will help the dentist to figure out how many support staff he/she would need and what each team member's responsibility will be. Using such basic tools as markers and a blackboard, the dentist is helped to conceptualize the type of services he/she will like to offer, the flow of clients and storage locations. Through a process called 'bubbling' the initial design of the facility the dentist chooses is presented. If it meets his requirements and those of the city in which the practice is located the design is developed.

Because of the client-specific nature of the overall mix of services the work of the professional services group is characterised by a lot of variability. This variability has broadened the task scope of employees in this group and also enhanced employee influence on the job, primarily because of the autonomy and responsibility associated with the task role. In the products group 'the low level of mechanization and the manual craftsmanship involved in much of the work has made it impossible to impose a detailed control system in accordance with the traditional methods of scientific management'⁵ and has therefore given employees in this group some autonomy and responsibility.

This form of technological process has enhanced the task role content of the employee and exerted pressures in the direction of direct

participatory structures which have altered the conventional organization of work. Self-management, on one hand, reinforces employee self-direction in carrying out his/her task role whilst group autonomy (an incipient form of autonomous work group), besides serving a social control function, ensures that employees with related skills and working on a block of related tasks are organized into a functional community, and collectively made responsible for its management and meeting production targets.

From our preceding discussion, we have shown that the standardized nature of tire and the resulting technology eliminates variability in the tirebuilding process and, furthermore, encourages the application of time and motion studies which together narrows the task scope of the builder. At The Group at Cox on the other hand, there is variability in the services rendered by employees and an element of craftsmanship broadens the task scope of the employees within the professional services group. In the products group, the low-level of mechanization and the element of craftsmanship involved in the group's work preclude a detailed control system and has enhanced employee discretion on the job. It can therefore be proposed in linking nature of product and technology to the form and content of participation that:

Opportunities for job-related participatory forms which transform the conventional organization of work are greater in organizations that have low level of mechanization or non-routine technology and high task interdependence.

Techno-Economic Uncertainty and Form and Content of Participation

In the view of Hellriegel and Slocum,⁶ technological uncertainty comes from the frequency of changes in product line and length of production whilst economic or marketplace uncertainty on the other hand, is defined by the number of competitive products, manufacturers and price ranges. The frequency or infrequency with which changes occur in an organization's techno-economic environment has been linked to definite organizational structures.⁷

It was pointed out in a preceding section that tirebuilding calls for diverse activities which have been organized into production and staff departments. Production work in the plant, especially in the tireroom, involves a combination of various components on a tire assembly machine in a prescribed manner which the builder does repeatedly during a shift. This routinized technology has made it possible to apply time and motion studies to production work and a detailed control system manifested in the centralized authority structure which also represents a pyramid of knowledge. As the literature indicates, a mechanistic structure, made possible by a routine technology, is appropriate for stable techno-economic environments because the monopoly of knowledge at the top is enough to resolve operational problems. However, when the techno-economic environment becomes unstable the organization must modify its structure in order to survive by seeking knowledge from other points in the hierarchy. Such an instability occurred in the economic environment of the tire industry.

The bulk of the products from the tire industry are sold in the replacement and original equipment markets defined by the automotive industry. This then makes the tire industry sensitive to the state of the automotive industry and the economy in general. Since the early eighties the North American automotive industry has faced stiff competition from Japanese auto manufacturers which affected demand for North American cars and therefore the demand for tires. Statistics Canada figures⁸ show that Japanese car imports in dollars have been rising steadily, \$1,688,541 in 1983; \$1,928,031 in 1984 and \$2,325,922 in 1985. Furthermore, the results of research and development has led to more efficient tires which last two or three times longer coupled with the fact that people drive less because of high gasoline prices. All these problems have first affected the original equipment and then the replacement markets.

Although the size of the market has shrunk by 40 percent due to lower unit shipments to original equipment manufacturers⁹, the number of companies in the North American tire industry has not, the result being that such companies as Goodyear, Firestone, Michelin, Uniroyal, Bridgestone and B.F. Goodrich are having to compete for a shrinking market. This has subsequently affected sales. For example, whereas sales from tire manufacturing operations at Firestone totalled \$4.7 billion in 1980 it was only \$3.9 billion in 1983.¹⁰ Overcapacity in the tire industry has therefore led to severe competition in both price and quality just to maintain market shares. To survive in such a competitive marketplace most of the companies are having to reduce costs

and improve operating efficiency. Plants which have not been able to do so have been shut down, for example, in Whitby and Calgary.

To avoid shut down, the sixty year old Hamilton plant came up with a survival plan to increase operating efficiency through cost reduction programs and improved quality. Improvements in plant efficiency and product quality at the Hamilton plant have required the participation of the plant's employees as well the commitment of capital funds by management. As pointed out earlier, tirebuilding is a repetitive process and the corresponding routine technology has pre-empted the task role content of the builder. Short of revolutionizing the technological process in such an old plant the routineness of the technology placed limitations on the extent to which the production process can be tampered with. The strategic choice has been to maintain the technological process and such forms of employee participation as storyboarding and just-in-time have been grafted onto an essentially bureaucratic organization as mechanisms to reduce cost and eliminate waste through employee problem identification and solving.

The dental equipment industry's line of business is defined by the supply of dental equipments and provision of services to both general and specialty dental practioners. This has therefore led to the divisionalization of the company into products and professional services groups. The nature of the work done in both groups and the corresponding technology has provided employees responsibility and autonomy in their task roles. In the professional services group for example, the service packages offered are tailored to meet the

preference of the individual dentist and for this reason an employee's work role can only be defined within a broad framework. Although the work of the products groups involves employees performing clearly defined tasks and does not involve any degree of uncertainty, the low level of mechanization and craftsmanship involved has worked against the introduction of principles of scientific management like close supervision. Furthermore, the work done in both groups is organized into successive steps which permit serial interdependence and a decentralized work structure. This structural opportunity, provided by the technological process, has been exploited by the strategic choice of management, to organize employees performing a series of related tasks into a functional community, where employees not only enjoy self-direction on an individual but on a group basis as well. The Group at Cox then exhibits an organic structure in that the work is defined as little as possible, and there is a high degree of informality and lateral communication.

This form of work organization has characterized the company since as far back as 1974 when the techno-economic environment could be described as stable. However, since the late seventies and early eighties, developments in the general economy and in dentistry have combined to make the techno-economic environment unstable. It was pointed out in an earlier section that because of the nature of its products, the dental equipment manufacturing industry serves a specialized market which is very sensitive to downturns in the economy. The generally unfavourable economic conditions of the late seventies

characterised by inflationary trends, high interest rates and the end of the transition from standup to sitdown dentistry have all combined to slow down the setting up of new dental offices and thereby flattened the market. Some of the major companies like Weber, Adec and S.S. Ratter have therefore folded up because it is unprofitable to compete in such a narrow market in view of their huge overheads. To survive in this industry companies need not only reduce their scale of operation but also develop cost-efficient and innovative products. Thus, because of its size and nature of work organization The Group at Cox has been able to weather the storm which has drowned such big companies. Market-generated uncertainty then did not have any observable impact on the form of work-level participation as they were in place before the techno-economic environment became unstable.

Our preceding discussion has illustrated that at the Firestone Hamilton plant tirebuilding is routinized. The resulting authority structure is hierarchical and solutions to operational problems come from up the hierarchy. However, the onset of market generated uncertainty could not be handled only by relying on solutions from the top hence the grafting of such participatory schemes as storyboarding and just-in-time onto the mechanistic structure to seek solutions from employees. Thus, although market generated uncertainty created the need to modify the organization's structure, the form of participation was constrained by the routinized technology. At The Group at Cox on the other hand, market generated uncertainty had no impact on the form of work-level participation. Such forms of direct or work-level

participation as employee self-management and group autonomy were facilitated by the style of management and nature of the technological process. The resulting organic structure with its emphasis on the contributive nature of knowledge in the performance of the company's task coupled with its small size made it well suited to cope with the market generated uncertainty. In linking techno-economic uncertainty to the form of participation it is our proposition that:

Organizations with a mechanistic structure encountering a turbulent and threatening business environment loosens up by way of adopting a direct participatory form within the constraints of the routine technology. On the other hand, organizations whose direct participatory forms are in response to a combination of management style and non-routine technology are unaffected by turbulence in the business environment.

Strategic Choice and Form and Content of Participation

Child's¹¹ critique of the mechanical adaptation proposition of structural contingency framework has shifted the focus of the structural determination process to the mechanisms through which management style translates the structural opportunities and constraints provided by size, technology and nature of product and environment into organizational structure.

The style of management at Firestone has been described as neo-scientific management which is deemed appropriate to meet the plant's goal of a low-cost, cost effective and quality tire manufacturer. Elements of this style of management include a low degree of organicity, a high degree of technocracy and humane participative management which

is more in line with the human relations tradition. The first two elements of this style of management have been given structural expression in relation to activities within the various production departments so as to closely monitor the core activities of the plant. This way tires can be produced at cost-effective prices within the limits of the plant's resources. In pursuit of this objective, the task role of every employee has been clearly defined and the Industrial Engineering Department, especially, has been used extensively to curtail some of the control production workers might have over the production process through the application of time and motion studies.

The resulting organization structure is such that there are layers of authority culminating in the position of plant manager. Each position and attached responsibilities are clearly defined. Technical expertise increases as one moves up the hierarchy and it is only employees up the hierarchy who are empowered to make decisions regarding unfamiliar conditions. By all intent and purpose, this style of management, structurally expressed in the preceding discussion of the plant's organization, is designed to ensure that production goes on smoothly and in stable conditions.

However, the price and quality competition in the marketplace and the difficulty of increasing marketshares have created pressures on the company to cut cost, eliminate waste and improve productivity and quality. To cope with these demands, a manager interviewed during the research remarked that "the choice for plant management was between

investing in your employees by way of a participative style of management or investing in expensive equipment to improve efficiency." Another manager underlined the role of strategic choice in view of structural constraints in determining the form of participation the plant implemented thus:

"In a monopolistic market, structure does not matter. Cost of product is not an issue. The only thing that matters is ability to deliver the product. But obviously in the type of market that we are in where there is an overabundance of suppliers and competitors in the marketplace we need a structure that maximizes the knowledge of employees and the level of motivation to keep them competent."

At Firestone, the decision to implement direct participatory structures was instigated by the turbulence in the plant's business environment. Having made the choice to invest in employees rather than expensive equipment to improve efficiency, the resulting form of participation was constrained by the plant's routine technology. The content of participation is therefore limited to employee identification and solving of problems such as; "not enough room between tread skid and tread tray - unsafe;" "bladder inflation before bead set to be included in cycle"; and "bladders should be changed when they blow off the ring."

The style of management at The Group at Cox on the other hand, has been described as democratic, comprising such elements as a high degree of organicity, a low degree of technocracy and an emphasis on consensual decision-making. During the formative years and prior to Wilson Southam's involvement in the company, the structure was loosely

bureaucratic. Employees had clearly defined task-roles, a foreman who co-ordinated the work activities on the shopfloor and the owners as ultimate authority. However, when Southam acquired controlling interest in the company he set about implementing his vision of the workplace. In an informal conversation he remarked that:

"The fear of industrial democracy is real among traditional managers who are used to being held personally accountable for results. Business in the end with its survival of the fittest philosophy is anything but inherently democratic. I have always had a prejudice towards this form of work organization (non-hierarchical). I feel it is an efficient way to organize work. Employees do not only have to work towards achieving the goals of the company but should be provided an opportunity to self-actualize and take part in running the whole company. I therefore looked for a company small enough and in the service industry to implement my vision (style of management, SA).

The structural expression of this style of management has resulted in a flat, organic structure, both at the shopfloor and organizational level. At the shopfloor, the task-role of the employee is loosely defined and in several cases the employee's personality defines the appropriate task-role. An employee remarking on the diffuseness of task-roles in the company said; "There are no limits at all to your job and if you want more responsibility you are at liberty to enlarge your work role depending on your skill anyway." The employee's picture of the extent of task-role diffuseness is however constrained by the work of the functional community which as an incipient form of autonomous work groups is a consequence of the task

interdependence in the company. An employee describing the interdependent nature of the production process remarked; "All communities are dependent. For example, before the product goes to the cleaning and packing community it must be finished by the cabinetry hardware community."

Besides the organic structure, production problems are resolved by seat-of-the-pants techniques rather than reliance on experts - even in the 1970's when the company was much larger. A member of the company when asked how production problems were and still are being resolved pointed out that; "When we have problems, for example, coming up with a design that meets the dentist's approval, all members of my functional community discuss till we are able to come up with an appropriate one." The rejection of technocracy is also emphasized in decision-making at the organizational level. Through such meetings as 'Right to Share' and 'Town Hall' meetings there is emphasis on collective and consensual decision-making which often takes the form of organized brain-storming when such issues as ways of improving performance via better service are being discussed.

Unlike the management team at the Firestone Hamilton plant, with its emphasis on a neo-scientific management style, Southam's implementation of participatory forms was not instigated by crisis in the business environment. It is doubtful, however, if he could have implemented this form of work organization if he had worked in another industry as his remark 'I therefore looked for a company small enough and in the service industry to implement my vision' attests. At The

Group at Cox, size then provided a structural opportunity for such organizational level participatory forms as 'Right to Share' and 'Town Hall' meetings whilst nature of product and technology besides influencing the size of the company and forms of participation associated with it (size) also, provided an opportunity which was exploited by Southam's style of management to implement employee self-management and group autonomy. From the above discussion it can be proposed in relating strategic choice to the form and content of participation implemented in a company thus:

Within the structural constraints and opportunities provided by the organization's context, organizational decision-makers create structures which are in tune with their style of management.

Organizational Autonomy (Status of Management) and the Form and Content of Participation

The inclusion of strategic choice in the structural determination process has necessitated a consideration of status of management or more appropriately, the autonomy of the organization (in this case, a subsidiary of a multinational corporation versus a locally owned limited liability company) which determines the power of the key organizational member(s) to implement a structure attuned to his structural preference.

The Firestone Hamilton plant is a subsidiary of Firestone International, headquartered in Akron, Ohio. The plant however comes under the direct control of The World Tire Group and as one of the operating groups under Firestone International, is charged with the

responsibility of the design, development and testing of tires. Like most multinational corporations, 'the superior knowledge located at head office, the increasing price of new technology and new products'¹² have all led to pressures towards centralization. The areas where this subordinate-superordinate relationship is most evident is in the recruitment of top management personnel, production quotas, capital expenditures exceeding \$50,000, the setting of organizational direction and the monthly visits of head office personnel to monitor the plant's performance. Asked to describe the nature of the relationship between Akron and the plant, one manager put it this way:

'The plant is not totally free from Head Office which sets framework for policies and anything the plant elects to do which is consistent with this framework is allowed. Local management plays a role in formulating internal policies but the final decision is made in Akron. The company's ultimate goal is to produce tires in a low cost plant.'

Another manager pointed out that 'Akron makes the final decisions and draws up the programme. What we do as local management is pick up the programme and implement it here in the plant.'

In a study of the causes of industrial disorder in two subsidiaries of a tire company, Maitland's description of the nature of the parental company's control over the two subsidiaries apply in its entirety to the nature of the relation between the Hamilton Firestone plant and the head office in Akron. He wrote thus:

"...the power to make policy decisions, e.g. finance, product lines, introduction of new equipment -

remained entirely in the parent company's hands; but the writ of the company ran to ... the shopfloor itself. This was most conspicuously the case when it came to production methods and technical standards.other less technical aspects of management were also subject to detailed central control. For example, there were constant interplant comparisons of manning, productivity and quality aimed at generalizing best practice ... financial and production statistics were prepared and reported on a uniform basis laid down by parent company; in addition, a not inconsiderable part of local management's time was occupied in preparing standard returns... answering questions from the plant, attending company-wide meetings and conferences, receiving visits from a succession of experts and so on."¹³

In view of the nature of control, the plant's management is under pressure to show results. To do that, the plant's structure has been influenced by the twin forces of the nature of product and technology and the need to pattern it on that of the parent company. The cost effectiveness of the Hamilton plant was however in jeopardy in the late seventies and early eighties because of the overcapacity in the tire industry and the high cost of operating old plants like the Hamilton plant. To stave off closure, the local management, operating within its narrow degree of freedom, came up with a survival plan which included a conversion to a seven day work week and a host of operational programs such as storyboarding and just-in-time which enlisted the involvement of employees. However, this plan was subjected to parental company approval which meant that it would have been shelved if it did not meet their approval.

The influence of organizational autonomy on the form of participation lies in the extent to which management has the power to

implement participatory forms without having to receive approval from a higher authority. In the case of the Firestone Hamilton plant, pressures exerted by the routine technology and the desire of management to centralize the making of decisions within their alley were contributory factors shaping the form and content of participation as coping mechanisms to the crisis in the tire industry.

The Group at Cox on the other hand, is a wholly Canadian owned limited liability company with two other shareholders besides the president, his vice and a Board of Directors. The president who owns majority shares in the company has the status of owner-manager. Although he reports to the Board of Directors on such matters as the performance of the company, development of product lines and the general state of the industry as owner-manager, he is entirely responsible for developing his operational strategy insofar as other shareholders are receiving a fair return on their investment. With such a high degree of autonomy, the president exploited the structural opportunities provided by the nature of product and technology and the size of the company to implement his structural preference.

The importance of organizational autonomy, expressed as owner-manager, in implementing a participatory form attuned to the key organizational member's strategic choice was highlighted in the personality clash that preceded the implementation of participatory forms in the company. A co-founder of the company, Ron Cox, did not subscribe to this style of management and therefore posed a stumbling block in the implementation of a participatory work organization. To

resolve the personality clash, the president used his position as a major shareholder to buy him out of the company. With Cox out, the president exploited the structural opportunities provided by the nature of product and technology and size to implement his style of management.

From the preceding discussion, it is evident that organizational autonomy and status of management do not have a direct influence on the form of participation. It simply determines the degree of leeway key organizational decision-makers have to exploit the structural opportunities and constraints provided mainly by the nature of product and technology and secondarily, by size in implementing their strategic choice. A proposition linking organizational autonomy to the form and content of participation can be formulated thus:

Opportunities for key organizational decision-makers to implement participatory forms attuned to their style of management (strategic choice) are contingent upon how much leeway they have. Such opportunities are least in subsidiaries and most in wholly owned limited liability companies.

Skill Level and the Form and Content of Participation:

Organization structure literature reviewed above posits that, skill levels within an organization will affect the form of participation in that the implementation of participation involves a new set of organizational roles which inevitably widen an employee's job scope.

The skill level needed in tirebuilding is dictated by the nature of the product and the technological process. It was earlier pointed out that in tirebuilding a builder goes through clearly identifiable

steps to assemble various stocks on a semi-automatic tire assembly machine. So routine and repetitive is the process that no special skills are required. However, because it is such a specialized task there is a training programme in place in the tireroom which equips builders with the requisite knowledge to perform their tasks. During the training period, builders are taught the basic knowledge or procedures to routinely build tires which include machine set-ups, safety, tirebuilding tolerance, quality procedures, tire specifications and detailed job descriptions.

In spite of the routinized nature of tirebuilding, the builders have acquired what Kusterer refers to as supplementary knowledge which he describes as 'the know-how necessary to handle obstacles to routine work.'¹⁴ In the case of the tirebuilders, the supplementary knowledge developed has to do with rectifying jam-ups, a knack for recognizing defective stock, for building quality tires and familiarity with the machine. Asked about what building a quality tire entails, a builder responded thus:

"You know I take real pride in building quality tires and if you get bad stock you build bad tires. By merely feeling the texture of a stock I know if it is bad and I do not use it."

It is to tap this reservoir of supplementary knowledge that builders have, that management has been able, within the constraints of the routinized technology, to implement such direct participatory forms as storyboarding and just-in-time. These forms of direct participation

focus on suggestions on cost cutting, waste elimination and problem identification and solving all of which depend on the supplementary knowledge of builders.

At The Group at Cox, the skill level needed to carry out the company's tasks ranges from skilled, for example the designers who have college education, to unskilled, for example the packing and cleaning employee who has grade school education. Some of the employees learnt their task-roles on the job, for example the employee responsible for long range planning and presentation, whilst others like the machinist and the cabinet makers came to their job with the requisite skill.

Although the work of the two functional communities, cabinetry assembly and cabinetry hardware comprising the products group, is quite routine there is an element of craftsmanship which has been reinforced by the low-level of mechanization. This therefore provides them some discretion in their work role behaviour. In the professional services group, the work of the learning, team-building, system, design and book-production communities is performed within a range of possibilities depending on the type of practice the dentist prefers. Coupled with the unmeasurability of work output, employees experience a lot of self-direction on the job. For example, the job of the designers is to design facilities supportive of sit-down preventive dentistry. Once the dentist has indicated the service he/she wants to offer his/her clients and the needed support staff, a designer has complete control in deciding how the work is done although may consult with other designers when he blanks out. One of the designers described his job thus:

"A designer's job is like that of an artist. The dentist tells you what kind of dental practice he prefers. I then visualize in my mind's eye what this will look like in terms of space planning and then paint a picture (design) of the facility. Unless you have formal training I cannot see how you can do it."

To emphasize the importance of individual skill to the functioning of first, employee self-management and group autonomy and second, to 'Town Hall' and 'Right to Share' meetings Southam remarked:

"You cannot give anybody a script to tell him/her what to do. They have to go and do whatever they can to ensure effectiveness and team effort. I simply cannot imagine no self-management in this kind of work. The only way this place can work is to provide employees the challenge of self-management."

The task-related skills are exploited at the 'Town Hall' and 'Right to Share' meetings when issues related to the work of the various communities come up for discussion. For example, discussion of how to improve work quality and type of manufacturing equipment to buy.

Our preceding discussion has shown that the effectiveness of direct participatory forms depends on the ability of employees to cope with the widened job scope that direct participation entails. In the case of Firestone, although the technological process pre-empts most work-related decisions, the supplementary knowledge tirebuilders have acquired has enabled them to contribute to the functioning of storyboarding. At The Group at Cox, the work performed by both the products and professional groups involve elements of craftsmanship and work quality is determined more by employees than machine. Furthermore, the low-level of mechanization and absence of standardized solutions to

problems encountered in the work make a lot of demands on the skill of the employees. Our proposition linking skill level to form and content of participation is that:

The more non-routine the technology the more likely will skill level shape participation in the form of job redesign and the more routine the technology the less likely will skill level shape participation in the form of job redesign.

Summary:

In this chapter, the explanatory framework proposed in the third chapter was used to explore why there was variation in the form and content of participation in the two companies. From our analysis, the nature of product and technology emerged as the foremost variable in exerting pressure on the one hand, and negative constraints on the other, to shape the resulting form and content of participation. At Firestone Hamilton plant, the routinized technology used in tirebuilding constrains the extent to which the job scope of builders could be widened, and therefore the extent to which management could tamper with the technology short of revolutionizing the production system. Hence, the adoption of such informal participatory schemes as storyboarding and just-in-time. At The Group at Cox on the other hand, the nature of product and corresponding technology, involving such a low level of mechanization, elements of craftsmanship and serial interdependence, allowed for employee self-direction and group work. These structural opportunities were then exploited to implement employee self-management and group autonomy.

Size as a structural variable, is determined by nature of product and technology. However, once the scale of operation has been established size interacts with technology to influence participation at both the shopfloor and organizational levels. The mass and standardized nature of tirebuilding is associated with large scale operation which implies more employees. Since the bulk of the employees are differentiated production workers, the application of time and motion studies to their work has not only increased the importance of people problems but also technical as well. Because of the size of the company and the differentiated work-units, (workforce) such problems cannot be individually resolved hence the formalized nature of industrial relations. Employee participation in the resolution of these problems is representatively effected through collective bargaining. At The Group at Cox, the nature of unit and craft production is such that it is associated with small scale operation and subsequently, the size of the workforce and therefore work-units tend to be small. In such a small-sized company and correspondingly small and less differentiated work-units, work problems such as co-ordination and control are resolved within face to face personal relationships (direct participation). Furthermore, the size of the workforce has facilitated the adoption of such forms of participation as 'Right to Share' and 'Town Hall' meetings at the organizational level which provides for collective, consensual decision-making in economic, personnel and social decisions.

Environmental uncertainty, as a variable, does not directly shape the form of participation. From our discussion, it was shown that in

the case of the Firestone Hamilton plant, market generated uncertainty created pressures for management to seek other sources of knowledge in the organizational hierarchy to enhance the competitiveness of the plant. The resulting form of participation was constrained by the routine technology and within this constraint, management style influenced the eventual adoption of storyboarding and just-in-time. At The Group at Cox, market generated uncertainty did not affect the form and content of participation since the structures of participation influenced by technology and style of management were in place before the onset of market generated uncertainty. Skill level, a derivative of the nature of product and technology, shapes the form of participation insofar as employees are equipped to handle the widened job scope that is involved in direct forms of participation.

Our analysis has also demonstrated that the contextual variables foremost amongst them, nature of product and technology and to a lesser extent size and techno-economic uncertainty, exert pressures and constraints but the resulting form of participation is shaped by style of management. For example, although they are all subject to the same market generated uncertainty, not all the subsidiaries within the Firestone Organization have adopted storyboarding and just-in-time as coping mechanisms. Furthermore, it was also shown that the extent to which key organizational decision-makers can implement their structural preference is either enhanced or constrained by the extent of organizational autonomy. Thus, following from our analysis, the explanatory framework can be revised to reflect the weight of the

structural variables in shaping the form and content of participation.

In the next chapter, we shall investigate the extent to which these participatory structures have given employees a sense of involvement in various decisions associated with organizational functioning and the impact of perceived involvement on employee quality of working life indicated by job satisfaction, job involvement and organizational commitment.

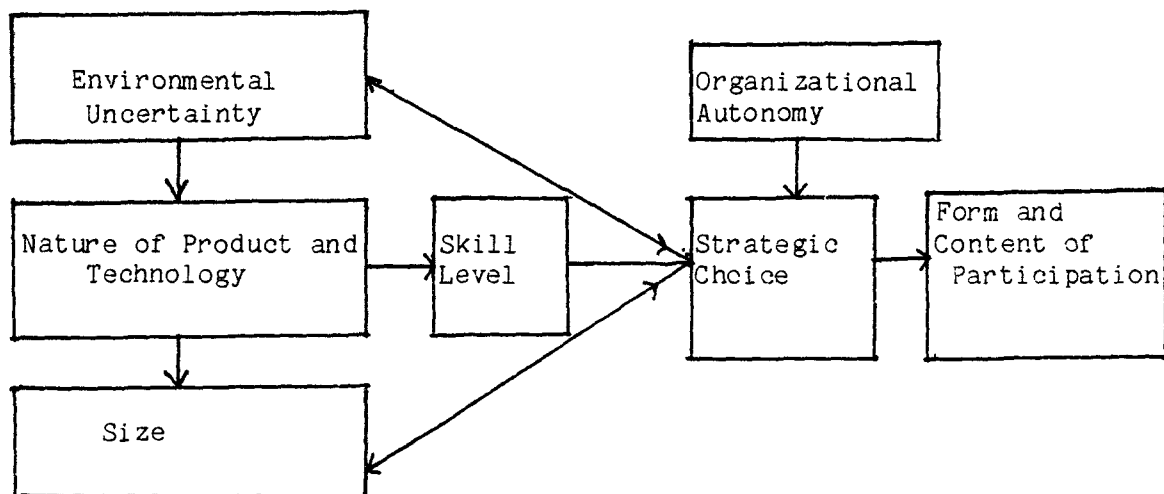


Figure 12: A Revised Model of the Explanatory Variables Interaction with Moderating and Dependent Variables.

Footnotes

1. This is a shortened version of a quote taken from Walker, K. "Workers' Participation in Management: Concepts and Reality" Paper Presented at the 2nd World Congress of the International Industrial Relations Association, Geneva, 1970, September p. 15.
2. The forms of employee involvement in management decisions classified on a continuum ranging from 'no involvement' to 'total involvement' was adapted from Clarke, R.; Fatchett, D.; and Roberts, B., Workers' Participation in Management in Britain. (London: Heineman Educational Books, 1972).
3. Woodward, J. Industrial Organization: Theory and Practice, (Oxford: University Press, 1980).
4. Clarke et al op cit. p. 58.
5. Gardell, B. 'Worker Participation and Autonomy: A Multi -Level Approach to Democracy at the Workplace' in Crouch, C. and Heller, F. (eds.) Organizational Democracy and Political Processes, Volume 1 (New York: John Wiley and Sons, 1983), p. 370.
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10. Firestone Annual Report to Shareholders, 1984, p. 10.
11. Child, J. 'Organizational Structure, Environment and Performance: The Role of Strategic Choice.' Sociology, 1972, vol. 6, pp. 1-22.
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13. Maitland, I. The Causes of Industrial Disorder: A Comparison of a British and a German Factory, (London: Routledge and Kegan Paul, 1983, p. 25.
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CHAPTER SIX

EMPLOYEE PERCEPTION OF INVOLVEMENT IN DECISION-MAKING AND PRIMARY-INDIVIDUAL LEVEL OUTCOMES¹

Introduction:

A defining characteristic of industrial management in contemporary organizations is the division of employees into those who command or plan (management) and those who obey or execute (workers). Workers' participation in management as an alternative form of industrial management is meant to modify this orthodox authority structure by providing structural mechanisms whereby non-managerial employees would be involved in the formulation of supposedly managerial decisions. Management philosophy and participatory structures in the two companies discussed in the preceding chapters seem to be attuned to this objective. The purpose of this chapter is to assess the extent to which employees perceived a modification of the authority structure indicated by their involvement in the formulation of selected decisional issues either directly or indirectly, through representatives. The main research questions for this chapter then are: (a) To what extent are employees involved in the formulation of the selected decisions as an indication of actual participation?; (b) Are there differences in perceived participation considering the structural contrast between the two companies?; (c) Do workers desire to be involved in decisions

pertaining to their jobs?; and (d) Is there any relationship between perceived participation and primary individual level outcomes¹ measured by job satisfaction, job involvement and organizational commitment?

Respondents' Perception of Involvement in Local-Medium Level Decisions

A starting point in the analysis was the rank ordering of selected local-medium decisions by the two respondent groups in terms of perceived importance. Ordinarily, decisions falling into the two levels of decision-making are analyzed separately, but for this study, it was difficult to identify decisions which were common to the two companies for the two levels so the latter were collapsed. Nine decisional items were presented to the respondents who were asked to rank order them from '1' to '9' according to what they feel is very important to them in carrying out work related tasks. Mean scores for the decision rankings are presented in Table 5.

Although the degree of agreement between the two respondent groups in terms of perceived importance of local-medium decisions was low (Pearson's $r=.37$) both groups considered 'Changes in Pace of Work' least important. At The Group at Cox, because of employee self-management, employees have a great deal of latitude in determining how fast or slow they worked which is reinforced by the nature of the product and technology. This has constrained the extent to which work output can be measured because of the variation in workflow underpinned by a managerial style which is predicated on a belief in allowing employees to set their work pace. The Firestone sample may also have

Table 5: Importance Ranking of Local-Medium Level Decisions
Very Important = 1.00; Least Important = 9.00

	The Group at Cox (N=18)			Professional Services Group (N=10)			Products Group (N=8)			Firestone (N=30)		
Distant Level Decisions	Mean Score	Std. Dev.	Rank- ing	Mean Score	Std. Dev.	Rank- ing	Mean Score	Std. Dev.	Rank- ing	Mean Score	Std. Dev.	Rank- ing
Work Quality	2.05	1.39	1	1.06	.78	1	3.04	1.21	1	5.36	2.32	6
Suggestions on how to Improve Productivity	3.44	1.54	2	2.89	.65	2	3.99	.78	4	3.20	1.86	1
How Job is Done	3.88	2.51	3	2.95	.62	3	3.33	1.03	2	5.86	2.20	8
Improvement in Work Conditions e.g. dust, noise, safety	4.16	2.52	4	4.83	.35	4	4.16	.65	5	4.10	2.33	3
Replacement of Personal Equipment	6.11	1.99	6	6.58	.85	7	6.10	.89	7	4.76	1.90	5
Transfer to Another Plant or Job	6.66	2.08	7	7.36	.94	9	6.32	.90	8	4.36	2.58	4
Changes in Working Hours	6.88	2.37	8	7.10	1.33	8	5.56	.44	6	5.70	3.15	7
Changes in Pace of Work	6.94	1.58	9	4.91	1.06	5	7.96	.59	9	7.66	1.72	9
Assignment of Tasks	4.83	2.03	5	5.83	.79	6	3.81	1.36	3	3.96	2.25	2
Average Mean Importance Score	4.96	1.89		4.83	.86		4.91	.90		4.99	2.10	

perceived this decision as being least important mainly because of the nature of the product and corresponding technology. Although tirebuilding has been mechanized to some extent, there is still a large manual component which provides employees the opportunity to determine how fast or slow they worked. It might be because of this discretionary element in the employee's work that is why there is an individual piece-work system in the tireroom to encourage tirebuilders to work a bit faster.

The two most important decisional items to The Group at Cox employees were 'Work Quality' and 'Suggestions on how to Improve Productivity' whereas the latter was the most important to the Firestone respondents. The Group at Cox employees might have perceived the two decisions as being important because of the service orientation of the company. In their kind of business environment where there is a lot of copying, a company's survival rests on reputation. A small-sized company like The Group at Cox, in order to survive, must earn a reputation for high quality products and for this reason employees might have come to perceive that decision as being important. An employee of the company underlined the importance of high quality products and the company's continued existence thus:

'We are providing services and dental equipments to customers who are not only looking for high quality products but should be inexpensive too. If we do not commit ourselves to quality products our customers may decide to go somewhere else and in the process threaten the company's future.'

At Firestone, 'Suggestions on how to Improve Productivity' was perceived as being the most important because the tire industry is

experiencing a great deal of market generated uncertainty in terms of competition and a shrinking market. In order to maintain market shares and thereby the continued operation of the plant, management introduced productivity oriented participatory schemes such as storyboarding and just-in-time. The respondents' perception of this decisional issue as the most important could be attributed to their fear of losing their jobs if the plant was unable to keep up with the competition because of slacking productivity and therefore shutdown. One of the tirebuilders emphasized this point thus:

'Productivity is number one because the way the marketplace is now if we don't improve our productivity we won't get our ticket. Ford, for example is gonna look at our tires and if it doesn't meet its standards they are gonna go somewhere else to get tires.'

Task assignment was perceived as being fairly important by the respondents. In the tireroom, the tirebuilders are assigned to specific tire assembly machines and therefore build only a particular tire specification. However, when a builder's machine is down and there is not available a machine of similar specification, the supervisor will have to assign the builder any available job which pays his average earnings or less. This area of decision-making is important to the employees because, although it affects their earnings the only way they can exert any influence is to refuse the assigned job and consequently, lose a day's wage.

Contrary to our expectation, there was no appreciable difference between the two groups of respondents in terms of perceived importance of the local-medium level decisions. Both groups of respondents

attached moderate importance to local-medium level decisions as indicated by an average mean score of 4.96 for The Group at Cox respondents and 4.99 for the Firestone respondents. However, a closer examination of the mean score for the individual decisions indicates that for five of these decisions, the mean difference between the two groups was more than 1.0. The Firestone respondents attached more importance to such decisional items as 'Replacement of Personal Equipment', 'Transfer to another Plant/Job' and 'Changes in Working Hours'. The Group at Cox respondents on the other hand, attached more importance to 'Work Quality' and 'How the Job is Done'.

Furthermore, for such a small-sized company as The Group at Cox, there was a high intra-respondent variation in the importance ranking.² A breakdown of the respondents into products and professional services groups revealed some interesting findings. Consistent with the finding that white-collar workers are more intrinsically oriented than blue-collar workers, the professional services group attached more importance to decisional areas intrinsic to the job than the products group. These decisional areas were 'Work Quality', 'Suggestions on how to Improve Productivity' and 'How the Job is Done'. The high importance The Group at Cox respondents attached to these three decisions reflects more the orientation of the professional services group than the products group.

Considering their blue-collar background it was not surprising that for five out of the nine decisions the mean difference between the products group and the Firestone respondents was less than 1.0. These decisions included 'Replacement of Personal Equipment', 'Improvement in

Work Conditions', 'Changes in Working Hours', 'Assignment of Tasks' and 'Suggestions on how to Improve Productivity'. However, for the four remaining decisions in which the mean difference exceeded 1.0, the products group attached more importance to 'Work Quality' and 'How the Job is Done' than the Firestone respondents. In view of the fact that these decisional areas are intrinsic to the job it could well be that the work experience of the products group has slightly weakened their blue-collar orientation.

Besides indicating the degree of importance attached to these decisions, the respondents were asked to indicate the extent to which they perceived themselves as being involved in the formulation of these decisions. For each of the decisions, respondents were asked: (a) to indicate the level of perceived involvement, and (b) the desired level of involvement. The extent of perceived involvement for the first scale was trichotomized into low (C), medium (B) and high (A). Table 6 below indicates the level of perceived involvement in the selected local-medium decisions as measured by percentage distribution and mean scores.

As expected, The Group at Cox respondents perceived more involvement in these decisions than the Firestone respondents as indicated by the average mean perceived involvement score. Although differences in the degree of involvement were moderate in some of the decisions, The Group at Cox respondents consistently showed more perceived involvement in all the local-medium level decisions.

Table 6: Perceived Involvement in the Selected Local-Medium Level Decisions

Local-Medium Decisions	<u>The Group at Cox (N = 18)</u>					<u>Firestone (N = 30)</u>				
	A (%)	B (%)	C (%)	Mean Score	Std. Dev.	A (%)	B (%)	C (%)	Mean Score	Std. Dev.
Work Quality	66.7	33.3	0	4.22	.88	13.3	46.7	40.0	2.60	1.10
Suggestions on how to Improve Productivity	61.1	27.8	11.1	3.55	.92	0	90.0	10.0	2.87	.43
How Job is Done	83.8	11.1	5.6	4.44	.85	46.7	26.7	26.7	3.47	1.48
Improvement in Work Conditions e.g. dust, noise, safety	55.6	33.3	11.1	3.39	.85	0	66.7	33.3	2.43	.86
Replacement of Personal Equipment	72.2	22.2	5.6	3.88	.75	3.3	83.3	13.3	2.83	.46
Transfer to Another Plant or Job	66.7	16.7	16.7	3.77	.87	10.0	83.3	6.7	3.00	.53
Changes in Working Hours	66.7	16.7	16.7	3.67	.97	3.3	16.7	80.0	1.37	.85
Changes in Pace of Work	83.3	5.6	11.1	4.11	1.13	53.3	6.7	40.0	3.33	1.81
Assignment of Tasks	72.2	16.7	11.1	3.67	.77	0	16.7	83.3	1.33	.71
Average Mean Perceived Involvement				3.86	0.87				2.56	0.93

No Involvement (1) and Decide on my own (5). A high mean score means high involvement.

A = High Involvement; B = Medium Involvement and C = Low Involvement

For example, respondents' perceived involvement in task assignment showed that at the Firestone plant respondents perceived this decision primarily as a managerial responsibility. The tirebuilders are organized into crews of about twenty under a supervisor and it is his responsibility to assign crew members to a specific tirebuilding machine. This is however, dependent on the type of tire a builder has been trained to build. Each builder then comes to 'own' his machine for his shift. However, because these machines break down so often the supervisor's role as somebody who assigns tasks has become quite prominent. In such instances, if there is no similar tirebuilding machine open the builder is assigned to a non-tirebuilding task for the shift and paid eighty percent of his average hourly earning or sent home at the same rate. The only time an employee cannot refuse work assigned him by the supervisor is when it pays the average, otherwise his only involvement is to refuse assigned work and therefore lose a day's wage.

Employees at The Group at Cox on the other hand, perceived a high degree of involvement in task assignment. Employees in the products group, in order to ensure that there is enough to meet market demand, do meet with the information co-ordinator who is also responsible for receiving client orders to draw up a production schedule. This schedule details out how many of each employee's output would be needed for a particular period. However, what an employee does on a daily basis is subject to his/her discretion, underpinned by a sense of responsibility to meeting the group's production target. By the same token, employees in the professional services group have their work cut out for them

during the long range planning visit during which they work closely with the dentist client to help map out the sort of service mix he/she would like to provide customers and the design of a facility to support that. On a day to day basis, each employee, working within a loosely structured job description does whatever he/she could to make the business a success. Furthermore, within both groups, there is a high level of floating whereby employees who are relatively free help other members of their functional community to meet production targets. Thus self-management has affected task assignment as evident from an employee's capsule description of the system:

'Self-management to me means that somebody who understands what the firm or group is trying to do and from that do everything possible that the person can do within his/her capability to help make it a success.'

Another decisional area where there was a clear-cut difference in perceived involvement and little within group difference was "Changes in Working Hours." The high perceived involvement of employees at The Group at Cox could be attributed to employees self-managing their time at work except during the core hours of 10 a.m.-2 p.m. Each employee is paid monthly based on 1680 applied hours per year which averages out to 7 hours per working day. An employee wishing to take time off arranges with members of the functional community and works overtime to makeup for the lost working time. This flexibility, coupled with the community-oriented mode of work organization has also meant that in order to meet the community's production target members have had to work

far and above the required number of hours. This however, is not perceived as negative. For example, an employee remarked:

'Self-managed flex time allows me the opportunity to run some domestic errands which I think is great. By the same token I have been working weekends at home. I have 900 over absorbed hours that I can never have. I work overtime everyday in my life.'

At the Firestone plant on the other hand, changes in working hours are still considered a managerial prerogative. At the time of the research the tire room and the other production departments operated a four-shift crew, each shift lasting 8 hours. The lack of employee involvement in deciding on changes in working hours could be explained by the fact that because of the expensive capital equipment the management feels a need to keep these equipments running all the time in order to get a reasonable return on investment. Employee involvement might have been perceived to be potentially disruptive of production schedules considering the size of the production or clock employees.

The only decisional issue where the combined high and medium perceived involvement of the Firestone plant respondents tallied with The Group at Cox respondents was 'Suggestions on how to Improve Productivity'. At The Group at Cox, perceived involvement in this decisional area flows from the nature of work organization and the diffuseness of job description. Although each functional community has a clearly defined jurisdictional area, the pieces are worked out by the members themselves and since they are responsible for the community's output they not only concentrate on work quality but also productivity.

A marked feature in the company during the period of the research was the frequency of community meetings which were like informal brainstorming sessions during which members tried to find out ways to improve productivity. At one such meeting of the systems community attended by the author, members discussed ways of improving productivity. This suggestion led to a proposal to employ somebody with an accounting background to present reliable estimates of the cost of the service mix the client may want and of the facility to support such a practice.

At the Firestone plant, work related participatory structures have been introduced to enlist worker involvement in enhancing productivity in order to cope with market generated uncertainty. Our analysis of the dynamics of storyboard meetings in the next chapter indicates that although these meetings provide respondents an opportunity to be involved in 'suggestions on how to improve productivity' they are powerless to enforce their suggestions. This therefore may account for their overwhelmingly medium level of perceived involvement in this decisional area.

Although The Group at Cox respondents perceived more involvement than the Firestone respondents, the difference in the average mean score was not as much as one would have expected (1.3 approximately). Furthermore, it was only in three decisional items ('Work Quality', 'Task Assignment' and 'Changes in Working Hours') that the individual differences exceeded the difference in the average mean scores. However, there was more consensus among The Group at Cox respondents in

their perception of involvement than the Firestone respondents as indicated by the standard deviation scores.

Compared to Table 5, it is paradoxical that the decisions in which the Firestone respondents perceived the most involvement were indicated as being the least important ('Changes in Pace of Work' and 'How the Job is Done'). It could either be because they perceived involvement in these decisions they had come to take them for granted or because of their blue-collar background they did not attach that much importance to decisional areas intrinsic to the job. Furthermore, the decisions in which the Firestone respondents perceived the most involvement were those that impact their ability to earn. These decisions were 'How the Job is Done', 'Changes in Pace of Work' and 'Transfer to another Plant/Job'.

Although the difference in perceived involvement among the two respondent groups in the selected local-medium decisions was less than expected, the little difference there was could be attributed to (a) the nature of product and technology; (b) size of the company and (c) management style at the two companies. In a discussion of the relationship between technology and organizational structure and, by implication, level of employee involvement in decision-making, Perrow² pointed out two factors that influence this relationship. These factors are: (a) the number of exceptional cases encountered and (b) the nature of the search process undertaken when exceptions occur which, together, determine the routineness or non-routineness of the production process. The technological explanation of the differential involvement of the two

sample groups in the selected local-medium level decisions rests on the fact that at The Group at Cox both the professional services and products groups enjoy a lot of discretionary behaviour at work. This is not so much because of the number of exceptional cases they encounter but instead because of the difficulty of the search process whenever they encounter exceptions, something which has been reinforced by employee and group self-management.

At the Firestone plant on the other hand, the tirebuilding process is low on both dimensions of technology identified by Perrow. The routineness of the technological process has meant that most of the work-related decisions are embedded in the technology. Furthermore, because of this technological constraint storyboarding and just-in-time, as work-related participatory structures, have been unable to enhance employee work-role discretionary behaviour.

The structural variable of size acting through such structural elements as vertical and horizontal differentiation and modes of control can also provide a partial explanation of the differing levels of perceived involvement by the two respondent groups. In a small-sized company such as The Group at Cox, there is a substantial decrease in the extent of impersonal control methods and a stress on personal flexible control which provides respondents an opportunity to be involved in decisions which may not even be related to the content of their work. In contrast, because of the size of the Firestone plant there is stress on impersonal and inflexible control modes in order to ensure predictability and co-ordination. The size attribute then results in

tirebuilders not having much involvement in local-medium level decisions some of which may be peripheral to their work.

Lastly, managerial philosophy may also explain the differing levels of involvement to the extent that it represents a deliberate attempt to increase levels of employee involvement inspite of structural constraints. For example, following from Perrow's analysis, the structural opportunities provided by the technology at The Group at Cox would not have resulted in the current form of work organization had the management style been different. The design of work is predicated on these principles: (a) There is only one honest speed for anyone doing any kind of work and that is the speed at which the individual feels s/he is doing a quality of work in which s/he can take pride; (b) Given an unmeasured high trust setting, the individual is the best judge of how he should organize his/her specific operations; and (c) All production work is knowledge work and each individual must be given the opportunity to perform a wide range and variety of tasks if he/she is to continue to grow in professional competence.

At the Firestone plant, the technological process is such that work related decisions have been pre-empted and tirebuilding has become routinized. The adoption of a participative management style exemplified by storyboarding and just-in-time has not altered the design of work along the traditional bureaucratic lines. The participative management style can only be perceived as a camouflage for the plant's scientific management style. This style of management has enabled management to harness the supplementary knowledge of the builders to

enhance the plant's competitiveness while retaining control over decisional areas considered crucial to a predictable workflow.

Respondents' Desired Mode of Involvement in Local-Medium Level Decisions

In several of the studies on workers' involvement in decision-making, respondents have typically, indicated differential involvement in favour of management. Following from this, researchers have wrestled with the question; 'Are employees satisfied with or would they prefer greater involvement?' To ascertain this, respondents have always been asked to indicate their desired level of involvement. In this study, respondents were asked the extent to which they desired participation or involvement in the selected local-medium level decisions. The desired scale was limited to local-medium level decisions because the participatory structures in the two companies were specifically designed to foster work-related involvement in decision-making and also because of the overwhelming evidence in the literature that most workers desire direct participation. For each decisional item, employees were provided five response categories to indicate 'How would you like a particular decision made.' Response categories ranged from 'I don't know, have no opinion' to 'I want to decide on my own.' Table 7 below provides the percentage distribution and mean scores for the desired level of involvement. For the purpose of analysis the response categories were trichotomized into three modes of involvement; viz; (A) No involvement; (B) Joint-Consultation and (C) Autonomy.

Table 7: Desired Involvement In Local-Medium Level Decisions

Local-Medium Decisions	The Group at Cox (N = 18)					Firestone (N = 30)				
	A (%)	B (%)	C (%)	Mean Score	Std. Dev.	A (%)	B (%)	C (%)	Mean Score	Std. Dev.
Work Quality	11.1	61.1	27.8	3.22	.80	0	93.3	6.7	2.83	.53
Suggestions on how to Improve Productivity	5.6	88.9	5.6	2.89	.47	3.3	96.7	0	2.93	.36
How Job is Done	11.1	55.6	33.3	3.11	.83	0	43.3	56.7	3.53	.62
Improvement in Work Conditions eg. dust, noise, safety	5.6	83.3	11.1	2.94	.72	3.3	96.7	0	2.83	.46
Replacement of Personal Equipment	11.1	77.8	11.1	2.88	.75	3.3	96.7	0	3.00	.45
Transfer to Another Plant or Job	22.2	61.1	16.7	2.44	.98	0	96.7	3.3	3.00	.52
Changes in Working Hours	5.6	66.7	27.8	2.88	.83	3.3	96.7	0	2.50	.63
Changes in Pace of Work	16.7	55.6	27.8	3.27	.96	3.3	40.0	56.7	3.36	.55
Assignment of Tasks	22.2	55.6	22.2	2.83	1.09	6.7	93.3	0	2.90	.54
Average Mean Desired Involvement No Involvement (1) and Autonomy (5)				2.46	.99				3.00	.48
A = No Involvement; B = Joint-Consultation and C = Autonomy										

Desired involvement in the local-medium decisions are discussed from two points: (a) Do the respondents want to be involved and (b) In what type of decisions. Regarding our first focus, it is indicative from the table that respondents at both companies do not have any revolutionary or radical zeal in the sense of desiring to exercise complete autonomy over work-related decisions. The predominant desired mode of involvement at both companies especially more so at the Firestone plant was joint-consultation. Secondly, a higher percentage of employees at The Group at Cox would prefer minimal involvement than the Firestone respondents.

As evident from Table 7, the Firestone respondents desired autonomy in such work-related decisions as 'How the Job is Done' and 'Changes in the Pace of Work'. It was indicated in Table 6 that these were decisions in which they perceived the most involvement. Their desire for more involvement could be attributed to the fact that control over these decisions enhances their ability to determine their earnings and thereby reinforces the feeling of being their own bosses. As blue-collar workers they might have perceived these decisions as being least important (see Table 5) but probably because they impact their ability to earn they desired more involvement in them.

Percentage-wise, The Group at Cox respondents, on the other hand, did not show any marked desire to exercise autonomy over any of the decisions. Instead, they would rather prefer to have all the decisions collectively made, that is to say, subjected to joint consultation. Their preference for joint-consultation could be attributed to the 'long

arm of the job' that worker autonomy entails. For some employees this had meant having to work several hours of overtime and generally created an overwhelming sense of responsibility involved in employee self-management as discussed in the next chapter.

Respondents' Satisfaction with Perceived Involvement in Local-Medium Level Decisions

Traditionally, employee satisfaction with perceived involvement has been taken to be a function of the discrepancy between desired and perceived involvement. To assess the extent to which respondents were satisfied with their perceived involvement in local-medium decisions, their average mean perceived and desired involvement scores for these decisions were compared as in table 8.

Table 8: Average Mean Desired and Perceived Mean Involvement Scores Compared

<u>Company</u>	<u>Desired Score</u>	<u>Perceived Score</u>	<u>Pearson r.</u>
The Group at Cox	2.46	3.86	.15
Firestone	3.00	2.56	.20

It is hypothesized, regarding differences in desired and perceived involvement, that the amount of actual participation an employee has on the job is a strong factor in predicting the extent of desired participation. It is evident from the table that whereas the Firestone respondents desired more involvement compared to their perceived involvement, The Group at Cox respondents desired less. This

finding can be explained in terms of two competing theories.³ In the case of Firestone where desired involvement exceeds perceived involvement the theory holds that the more involvement employees have the more involvement they want although this tendency could be reversed or stopped at a point in time. Clearly, the Firestone respondents have not reached such a point. At The Group at Cox on the other hand, it could be postulated that respondents have reached such a point where diminishing aspirations had set in, hence their desired involvement score being less than the perceived involvement score. The other theory which the IDE Research Group calls satiation thesis could therefore be used to explain the unusual discrepancy between desired and perceived involvement at The Group at Cox. This theory holds that after a point in time the more involvement employees have the less they will want. In our analysis of perceived involvement in the local-medium decisions it was shown that the work-related participatory structures at The Group at Cox in conjunction with a democratic management style has given these employees a great deal of involvement whether as individual employees or as members of a work group. It could well be that after years of experimenting with workplace democracy and probably the special problems associated with it The Group at Cox employees have reached a point of satiation.

Considering the discrepancy between desired and perceived involvement how satisfied were the respondents with their perceived involvement in local medium decisions? Responses to a single item question 'How satisfied are you with the way direct participation works

in your department or company (that is to say your taking part in job related questions which traditionally had been made by your boss or superior?))' were trichotomized as in table 9 below.

Table 9: Respondents Satisfaction With Involvement in Local-Medium Level Decisions

<u>Level of Satisfaction</u>	<u>Cox</u>	<u>Firestone</u>
High	16 (88.9)	16 (53.3)
Medium	1 (5.6)	10 (33.3)
Low	1 (5.6)	4 (13.3)
	18 (100.1)	30 (99.9)

Cramer's V = .37

Considering that The Group at Cox respondents have more involvement in these decisions than they desired, the extra responsibility should make them feel stressful on the job and this then should be translated into dissatisfaction. The fact that they were very satisfied could mean that in reality they either did not experience much discrepancy between their perceived and desired involvement or the 'overwhelming responsibility' involved in employee self-management was not negatively perceived. The Firestone respondents, on the other hand, were fairly satisfied. This could be attributed to their perception of the individual piece-work as providing them an opportunity to be their own bosses and their high perceived involvement in those decisions that impact their ability to earn. Table 10 below reinforces the preceding discussion when the difference between desired and perceived involvement was correlated with satisfaction with direct participation.

Table 10: Average Mean Desired - Average Mean Perceived Involvement
Scores Correlated with Satisfaction with Direct
Participation

Company	Kendall Correlation Coefficient
The Group at Cox	+ .14
Firestone	- .32

Respondents Perception of Involvement in Distant Level Decisions

Schemes of employee involvement differed at this level in the two companies. At the Firestone plant, involvement was representative through the collective bargaining process whilst it was direct at The Group at Cox through collective participation in 'Right to Share' and 'Town Hall' meetings and other specialized mechanisms like 'Participatory Voting on Pay' and 'Committee for the Success of the Person.' Initially, both groups of respondents were asked to rank-order eight selected decisional items which are generally made at this level in the two companies. These decisional items were rank ordered on a scale of 1 to 8 according to which they considered most important to least important. Table 11 below provides the mean scores for the decision rankings.

The degree of relatedness between the two sets of mean scores for the importance ranking was given by a Pearson r of .67. An illustration of the moderate closeness of the ranking was the ranking of 'whether or not work study techniques are used' as least important in both groups. At The Group at Cox, the nature of work, reinforced by the system of

Table 11: Importance Ranking of Distant-level Decisions
 Very Important = 1.00 Least Important = 8.00

Distant Level Decisions	The Group at Cox (N=18)			Professional Services Group (N=10)			Products Group (N=8)			Firestone (N=30)		
	Mean Score	Std. Dev.	Rank- ing	Mean Score	Std. Dev.	Rank- ing	Mean Score	Std. Dev.	Rank- ing	Mean Score	Std. Dev.	Rank- ing
Closures or Mergers	4.55	2.20	4	3.72	1.02	2	5.38	1.22	6	3.37	1.74	4
Wage Level	3.66	2.24	2	5.05	1.13	5	2.27	.68	1	1.50	.93	1
Working Conditions (eg. fringe benefits)	3.72	2.32	3	4.96	1.56	4	2.48	.74	2	2.73	1.38	2
Dismissals and Grievances	4.77	2.07	5	5.64	.74	8	3.90	.67	4	3.03	1.24	3
Major Capital Investments	5.27	2.08	6	5.13	1.26	6	5.62	1.52	7	5.96	1.03	6
Distribution of Profits and Pricing Policies	4.77	1.08	5	4.48	.81	3	5.06	.98	5	6.53	1.22	7
Decisions about major changes in the workforce	3.22	1.92	1	3.71	1.19	1	2.84	1.49	3	4.96	.92	5
Whether or not work study techniques are used	5.94	2.79	7	5.39	0.98	7	6.69	1.26	8	7.53	1.00	8
Average Mean Importance Score	4.45	1.96		4.76	.95		4.28	.88		4.48	1.12	

direct participation has made it difficult to establish how much of an output each employee should produce during the working day. Precisely because work study techniques are not applied to their work the employees ranked it as being least important. At the Firestone plant on the other hand, the nature of the work in the tireroom lends itself to the application of work study techniques and furthermore, it is the basis on which hourly earnings of the tirebuilders are calculated. However, the low importance ranking of this decision could well be because it is manifested in the wage level which was the most important decisional issue.

The high importance ranking attached to wage levels and working conditions by the Firestone respondents is representative of most blue-collar workers. This has been interpreted in the literature on blue-collar work values as a manifestation of a trade off between extrinsic and intrinsic rewards at work. During the research most of the tirebuilders repeatedly stressed the importance of extrinsic rewards as typified by the following remark:

'Pay and working conditions are number one. If you cannot get enough pay and good fringe benefits nothing else matters. It is no big deal being a tirebuilder so the pay should be enough to make up for the lack of prestige, you know.'

Although the overall means and the rank orders were similar among the two respondent groups the table depicts a lot of discrepancy between the individual decisional items. For The Group at Cox, the range of variation in the mean score was smaller and in the middle ranges of the

scale, from a high importance ranking of 3.22 to a low importance ranking of 5.94. For the Firestone respondents on the other hand, the range was much broader, from a high of 1.50 to a low of 7.53.

As with the importance ranking of local-medium decisions, The Group at Cox respondents again revealed less consensus in the importance ranking compared to the Firestone respondents. A breakdown of the former respondents into their two constituent groups, products and professional services, revealed differences in the importance ranking. The blue-collar background of the products group, as opposed to the white-collar background of the professional services group, explains why the products group attached more importance to 'Wage Levels' and 'Improvements in Working Conditions (e.g. fringe benefits)' than the professional services group. The Firestone respondents on the other hand, attached more importance to 'Wage Levels' than the products group whereas the latter group attached more importance to 'Improvements in Working Conditions (e.g. fringe benefits)' than the Firestone respondents. In either case however, the difference in mean score was less than 1.0. Regarding the products group, it therefore could be argued that there is a limit to which work experience can override previous orientation in this case, a blue-collar background.

In addition to the importance ranking of the selected distant level decisions, respondents were requested to indicate the extent to which they perceived themselves either through the union local or the collectivity of the workforce as being involved in the formulation of these decisions. For each decisional item, respondents were provided

with five response categories which were trichotomized into low (C), medium (B) and high (A). Table 12 below indicates the level of perceived involvement in percentages and mean scores.

Using the average perceived mean score it is evident from the table that The Group at Cox respondents perceived more involvement in distant level decisions than the Firestone respondents. The mean score variation for the individual decisional items for The Group at Cox was lower, a high of 2.22 to a low of 3.40, compared to Firestone, a high of 1.13 to a low of 4.63. The Cox respondents therefore perceived moderate involvement in almost all decisions whereas the Firestone respondents perceived a more marked involvement in some decisions than they did in others. Furthermore, the three decisional items in which the Firestone respondents perceived high involvement were the same ones (and in the same rank order) they feel were the most important (see Table 11). One of the decisions in which the Firestone respondents perceived a high involvement was 'wage levels'. This could be attributed to the influence of the union in collective bargaining. As in most unionized settings, wage issues tend to dominate the bargaining process and by effectively wielding the strike weapon, the union is perceived as having a great deal of involvement in setting wage levels. One of the tirebuilders remarked:

'The money and benefits are much better here and when you know your job it makes you feel better about yourself. If we did not have the union here the company can give you five dollars an hour and there is nothing you can do except to quit. The union has done an awful lot about our wages, benefits and rights and will even call a strike if that is what it takes to get a fair treatment from management.'

Table 12: Perceived Involvement in the Selected Distant Level Decisions

Distant Level Decisions	The Group at Cox (N = 18)					Firestone (N = 30)				
	A (%)	B (%)	C (%)	Mean Score	Std. Dev.	A (%)	B (%)	C (%)	Mean Score	Std. Dev.
Closures or Mergers	33.3	22.2	44.4	3.22	1.70	23.3	50.0	26.7	4.60	1.12
Wage Level	44.4	16.7	38.9	3.11	1.45	100.0	0	0	1.13	.35
Working Conditions (e.g. fringe benefits)	61.1	11.1	27.8	2.38	1.58	100.0	0	0	1.33	.48
Dismissals and Grievances	61.1	5.6	33.3	2.38	1.65	90.0	10.0	0	1.46	.63
Major Capital Investments	44.4	11.1	44.4	3.40	1.48	20.0	36.7	43.3	4.63	1.19
Distribution of Profits and Pricing Policies	55.6	11.1	33.3	2.83	1.51	26.7	33.3	40.0	4.23	1.13
Decisions about major changes in the workforce	66.7	11.1	22.2	2.22	1.43	50.0	36.7	13.3	2.63	.90
Whether or not work study techniques are used	55.6	16.7	2.78	2.55	1.69	20.0	36.7	43.3	3.30	.84
Average Mean Perceived Involvement				2.76	1.36				3.35	.78

A great deal (1) and Not at all (5). A low mean score means high involvement.

A = High Involvement; B = Medium Involvement and C = Low Involvement

At The Group at Cox on the other hand, inspite of the 'participatory voting on pay' most of the respondents perceived only a moderate involvement in this decisional area compared to the Firestone respondents. As a specialized machinery, participatory voting on pay only provides a framework within which the president in consultation with the pay committee decides how much raise an individual gets. The president unequivocally underlined the advisory role of the process in his remark that:

"The purpose of the voting is to advise me as the General Manager on how to make differences in pay as fair as possible to each member of the group while keeping in mind some of the realities of the world in which we live. Setting pay rates is not a question of policy and remains a responsibility of mine as General Manager. Consequently, I am not bound to follow the results of the voting or other advice offered."

Unlike the Firestone respondents, therefore, employees at The Group at Cox do not have any built-in mechanism whereby they could ensure that pay rates are set in accordance with their voting.

Another decisional area in which the Firestone respondents perceived more involvement than those at The Group at Cox was in 'dismissals and grievances.' A central issue in plant relations is grievances and dismissal. Until recently, employees did not have property rights to their jobs and as such could be dismissed at the whims of the employer without the necessary due process. A defining characteristic of modern industrial relations is the abrogation of such employer rights. In both companies there are clearly specified mechanisms through which the aggrieved employee could seek redress. In

big bureaucratized companies like Firestone, the strict enforcement of rules engenders a high frequency of grievances. In the tire room, popular grievances are centred around wage rates, downtimes, and the tire count (i.e. number of tires built during the shift.) Consequently, a preoccupation of union officials is attendance at grievance hearings set for Tuesday mornings. In the perception of most of the tirebuilders the union has been effective in backing them up. One of them remarked:

"In big companies the company can walk all over you and it is especially bad because there is no real person you can deal with and when it gets that bad you have got to have somebody to help you out. That is why we have the union in here!"

At The Group at Cox, grievance and dismissal hearings used to be frequent when the company employed a lot more people. It was during this time that the appeal system was effectively used and most of the employees recalled during the research the president rescinding his decision to suspend or dismiss an employee because of the outcome of the appeal. However, with the shrinkage in the size of the company grievances and dismissals for disciplinary reasons are less frequent and if and when an employee is aggrieved it is informally discussed and resolved.

Besides employee perception of involvement in personnel and social decisions like the preceding ones, their perception of involvement in long term economic decisions like 'Major Capital Investments' and 'Distribution of Profits and Pricing policies' was only minimal. On the average, however, The Group at Cox respondents perceived more involvement in these decisions than those at Firestone.

This is attributable to the fact of their participation at "Right to Share' and 'Town Hall' meetings rather than any real involvement in these decisions. Our analysis of the process or dynamics of participation at these meetings in the next chapter shows that because of the respondents' lack of expertise in these decisional areas and the status of the president as owner he tends to over-participate, thereby reducing the process to information sharing or consultation. An employee remarked:

"Occasionally decisions had been decided already and we go there (the meetings) to rubber stamp them but I cannot think of an instance although it happens. However, when it comes to the really important things like closing the products group we do speak about them."

One such important thing was closing the products group, a decision which was made by the president although the respondents claimed they were informed at every stage what he (the president) was doing. The absence of a marked involvement in any of the decisional areas on the part of The Group at Cox respondents (although they are supposedly involved in formulating these decisions) could be attributed to the lack of a mechanism to back up their views except persuasion. By lacking a built-in mechanism to back up their views these workers did, in a sense, have less effective means to participate.

At the Firestone plant, the low level of involvement in long term economic decisions was because the plant is a subsidiary and as usual for multi-national corporations such decisions and the right to make them are centralized at the Head Office. The long term objectives of the plant are formulated at the Head Office and the plant is only

responsible for implementing and evaluating these objectives on a day to day basis. It is only when such decisions are likely to affect the production employees markedly, for example closures or mergers that the union would be drawn into the discussions and even then it has no power to reverse decisions made at the Head Office.

Our analysis of respondent perceived involvement in distant level decisions has indicated that at both sites respondents were not really involved in formulating long term economic decisions. At the Firestone plant such decisions are clearly not open to participation. At The Group at Cox on the other hand, although such decisions are open to participation, the respondents do not have the expertise to participate in them. Our analysis in the next chapter indicates that even if they did, property rights do confer on the owner, the power to make these decisions. Thus, in general, ownership/formal authority does not only confer the power to decide which decisional issues are open to participation but also the extent of employee involvement.

Another finding is that collective bargaining is more effective than the new structures meant to ensure worker involvement in social and personnel decisions like 'wage levels', 'dismissals and grievances' and 'improvement in working conditions' (e.g. fringe benefits). This is because, unlike the new structures such as 'Town Hall' meetings, there is a built-in mechanism in collective bargaining, that is the strike weapon that employees could use to back up their views on decisions open to employee involvement.

Respondents' Satisfaction with Perceived Involvement in Distant Level Decisions

To measure employees satisfaction with their involvement in decisions at this level they were asked: "How satisfied are you with the function of your local union or 'Right to Share' and 'Town Hall' meetings as mechanisms for channelling employee concerns and getting feedback on them." Responses were trichotomized into low, medium and high satisfaction as indicated in the table below.

Table 13: Respondents Satisfaction with involvement in Distant Level Decisions

<u>Level of Satisfaction</u>	<u>Cox</u>	<u>Firestone</u>
Low	2 (11.1)	5 (16.7)
Medium	1 (5.0)	5 (16.7)
High	15 (83.3)	20 (66.6)
	<u>18 (100.0)</u>	<u>30 (100.0)</u>

Cramer's V = .48

The high satisfaction of The Group at Cox respondents with distant level participation is attributable to their involvement at meetings where these decisions are supposedly formulated. This may have given them a feeling of making an input into these decisions. At the Firestone plant on the other hand, the moderately high satisfaction of the respondents in the distant level decisions is mainly because of their lack of involvement in decisions about their continued employment. A respondent must have captured the sentiment of his peers regarding job security when he remarked:

"The only thing I don't like as a tirebuilder is security on the job. It is not there and it never was. I have been here 7-1/2 years and have seen people laid off several times. Thank God I wasn't. Tirebuilding is alright but you never know where you gonna be the way business is operating and the union cannot do much about it either."

In the next section we will explore the influence of respondent perceived involvement on such primary individual level outcomes as job satisfaction, job involvement and organizational commitment.

Primary Individual-Level Outcomes

Workers' participation schemes have been introduced not as ends in themselves but because of the anticipated positive consequences or outcomes. Mean scores for the outcomes of job satisfaction, job involvement and organizational commitment are shown in the table below.

Table 14: Mean Scores for Outcome Variables
1 = Highest attainable level or outcome

<u>Outcome Variable</u>	<u>Cox</u>		<u>Firestone</u>	
	Mean Score	Std. Dev.	Mean Score	Std. Dev.
Overall Mean Satisfaction Score	1.95	.49	2.70	.58
Mean Extrinsic Satisfaction Score	2.40	.70	2.46	.63
Mean Intrinsic Satisfaction Score	1.51	.53	2.95	.73
Mean Job Involvement Score	2.46	.58	3.16	.57
Mean Organizational Commitment Score	1.89	.52	2.75	.48

Job facet satisfaction scores were obtained by requesting respondents to indicate their affect ratings of various facets of their job which ranged from very satisfied (1) to very dissatisfied (5).

Extrinsic satisfaction (working conditions, pay, security, contact with other workers and advancement) as indicative from Table 14 was about the same for both groups. Consciously recognized components of extrinsic satisfaction at both research sites were typified in such comments by the respondents at The Group at Cox: 'The flex-hours are great. As a working mother it provides an opportunity to run some errands outside the core hours,' and 'I really enjoy the people I work with. Through employee self-management I have come to know other employees better because of the need for teamwork and therefore, constant communication.' At the Firestone plant, some respondents commented thus: 'The pay is good. Because of the piece-work you can make as much as you want if only you can break your back a bit' and 'Guys here are great. There is a feeling of support but I think it is the pay that keeps most guys here.'

Following from our analysis of perceived involvement in local-medium level decisions it is not surprising that The Group at Cox respondents scored higher than the Firestone respondents in terms of intrinsic satisfaction. The main source of intrinsic satisfaction as perceived by most of the respondents at The Group at Cox was the freedom self-management promotes. For example, an employee remarked thus:

"I like the kind of freedom. I have a feeling of worth for having some say in decisions even though it might be minute. I am sure I would rather work here than a bureaucratic cut and dry place which tells you when to jump and how high."

The definition of job involvement as the importance of work in one's total self-image (central life interest) in this study implies

from Table 15 that both groups of respondents did not see their work as being central to their self-image with mean job involvement scores of 2.46 and 3.16 for The Group at Cox and Firestone respondents respectively. Considering the high intrinsic satisfaction of The Group at Cox respondents, they should have more than average job involvement. Although most of them like their jobs because 'I like the feeling that there is no one over me and there is nobody under me', it has not yet been translated into job involvement. Consistent with our definition of job involvement, individuals in modern society perform a multiplicity of roles and for that reason there is a limit to which one would like to be involved in his or her job. There is therefore a limit to the extent to which participation can enhance employee job involvement. Most of the respondents at both research sites agreed with the importance of work but being married, they saw their family life as being more important.

As an outcome variable, organizational commitment, considered as arising at the intersection of organization requisites and personal experience, was higher among The Group at Cox respondents than those at Firestone. At the former company, employee involvement in the yearly review of the company's goals and meetings where information about the company's future is shared might be serving a commitment mechanism function as opposed to Firestone where employees are excluded from such activities.

However, to find out the extent to which perceived involvement in decisions relates to the level of outcomes, average perceived mean involvement scores for the two levels of decisions were correlated with

the primary individual level outcomes as indicated in the table below.

Table 15: Kendall correlation coefficients for the relationship between average perceived involvement and primary individual level outcomes

<u>Company</u>	<u>Job Satisfaction</u>	<u>Job Involvement</u>	<u>Org. Commitment</u>
(a)			
Cox (N=18)	.26	.24	.12
Firestone (N=30)	.13	.10	.11
(b)			
Cox (N=18)	.17	.09	.49
Firestone (N=30)	.22	.15	.01

-
- a. average perceived involvement in local-medium decisions.
 b. average perceived involvement in distant decisions.

As evident from the table, perceived involvement in both local-medium and distant level decisions did not relate to job involvement markedly in either company. As explained earlier this could be because most of the respondents saw their families and family life as being more important. Job satisfaction at The Group at Cox relates more to perceived involvement in local-medium decisions whereas it is the converse at Firestone. At The Group at Cox this finding is consistent with our analysis in the preceding sections showing that the respondents perceived more involvement in the work-related decisions than the Firestone respondents. Finally, perceived involvement in local-medium decisions relates weakly to organizational commitment in both companies whereas perceived involvement in distant level decisions relates strongly to organizational commitment at The Group at Cox. As explained

earlier this could be attributed to their involvement at meetings where information on the company's objectives and future are discussed.

Summary

In this chapter we have demonstrated the extent to which the authority structure in both companies has been modified through employee involvement in the formulation of the selected decisions. Our analysis of the importance ranking of the local-medium decisions showed that the professional services group at The Group at Cox attached more importance to decisional areas intrinsic to the job than the products group. This was explained as a result of the differences in their orientation, white-collar in the former group and blue-collar in the latter group. However, the products group attached more importance to these decisional areas than the Firestone respondents with whom they share blue-collar status. It was therefore suggested that work experience could weaken blue-collar orientation.

The analysis of perceived involvement in the local-medium decisions showed that on the whole, The Group at Cox respondents perceived more involvement than the Firestone respondents although the difference was not as big as expected. This was probably because the Firestone respondents perceived involvement in decisions that impact their ability to earn thereby reinforcing the feeling of being their own bosses.

Regarding desired involvement in local-medium decisions, both groups of respondents did not indicate any revolutionary zeal in terms

of wanting worker control or autonomy. The predominate mode of desired involvement in local-medium decisions was joint-consultation. Furthermore, both respondent groups indicated a discrepancy between desired and perceived involvement in local-medium decisions. The Group at Cox respondents have more involvement than they desired whereas the Firestone respondents have less than they desired. The unusual situation at The Group at Cox was explained by the satiation thesis. Probably after experimenting with workplace democracy and the problems associated with it the employees must have lost their initial enthusiasm. At the Firestone plant, respondents' desired autonomy in such work-related decisions as 'Change in the Pace of Work' and 'How the Job is Done.' For blue-collar workers' on individual piece-work these decisions impact their ability to earn and probably for that reason their desire for autonomy does not so much reflect an intrinsic orientation (they had earlier indicated these decisions as being least important) as a reinforcement of the feeling that they are their own bosses.

Our analysis of the importance ranking of the distant level decisions indicated that although the products group attached more importance to decisions intrinsic to the job (as shown by the importance ranking of the local-medium decisions) than the Firestone respondents with whom they share a blue-collar status, they both attached more importance to the extrinsic decisions (wage level and working conditions) among the distant level decisions than the professional services respondents. In the case of the products group, this finding

was interpreted to mean that the relationship between work experience and blue-collar status is two-directional.

Although The Group at Cox respondents perceived more involvement in the distant level decisions both groups of respondents are not markedly involved in long term economic decisions. At the Firestone plant, these decisions are not open to participation. At The Group at Cox where they are open to participation, respondents lack the expertise to make such decisions. Even if they had the expertise, ownership rights would confer on the president the power to override employee suggestions. In the personnel and economic decisions made at this level collective bargaining was shown to be more effective in ensuring employee involvement than such participatory structures as 'Participatory Voting on Pay' and 'Town Hall' meetings. This was explained as a result of the power level at which collective bargaining operates and the resultant strike weapon.

Regarding the impact of perceived involvement on the outcome variables it was found that at both levels it relates weakly to job involvement in both companies whereas organizational commitment relates fairly strongly to perceived involvement in distant level decisions as shown in the case of The Group at Cox.

In the next chapter we shall explore the dynamics of participatory structures in the two companies in terms of its actual functioning as opposed to the prescribed or formal designs.

FOOTNOTES

1. The term 'primary individual level' outcomes was originally used by the IDE Research Group. See Industrial Democracy in Europe (Oxford: Clarendon Press, 1981).
2. Considering the difference in the orientation of the two constituent groups at The Group at Cox, the author did a breakdown of the respondents into professional services and products groups. For each table, responses of the two groups were analysed separately and where intergroup mean difference regarding either the individual decisions or the overall mean difference in the outcome variables was less than 1.0 it was decided to look at the respondents as a group.
3. Perrow, C. 'A Framework for the Comparative Analysis of Organizations,' American Sociological Review, 1967, vol. 32, pp. 194-208.
4. IDE Research Group op. cit. p. 314.
5. Southham, W. Memo to Employees at The Group at Cox, 1974, January 4th.

CHAPTER SEVEN

FROM SCHEME TO PRACTICE: THE DYNAMICS OF PARTICIPATION IN THE TWO COMPANIES

Introduction

The focus of this chapter is on the operation of the participatory structures in order to discover and explain discrepancies between the formal designs and how they work in practice. The main research question for this chapter is: 'how much of an opportunity is provided and how much influence can be exerted through the participatory process?'

The Dynamics of Participation at The Group at Cox

Respondent Understanding of the Structures of Work-Related Participation

As a starting point, respondents were asked to explain how they understood their structures of participation. This was considered important because although participatory schemes are usually implemented unilaterally by management, their successful operation, by way of the attainment of managerial and organizational objectives, depends on employees understanding of these objectives and consequently, their role within the system. At The Group at Cox, employees' interpretations of first, employee self-management and second, group autonomy centred on work-role diffuseness and freedom or autonomy to do the work as they saw fit both as individuals and as members of functional or work communities. Representative of the first view were such remarks as:

"Self-management basically for me is you look to the job you are doing, you look to other things that you might enjoy and take the ball and run with it. If you are bound into a particular position you are not given the freedom to use your ideas and mind. This is what is good about it."

"Somebody who understands what the firm or group is trying to do and from that does everything possible within his/her capability to help make it a success."

"It means you do whatever you think is the best way to do it and is good for the group as a whole."

Work-role diffuseness, whilst attained, by employee membership of more than one functional community, is curtailed by the skill of the employee. The second view, which also illustrates the degree of interaction between functional community members, was distilled in the remarks:

"We do not have to go around and say please can we do that. We are free to do whatever we could to ensure that our community does not hold the whole group back."

"People as opposed to having someone to go to and ask what they might do next or having someone check their work that doesn't really exist. Paul can come to me and ask me what he can do but he knows as well as I do what needs to be done and what jobs are expected to be coming in. When it comes to designing he is the one struggling to do design work by the same token if I draw a blank he helps out. We trade back and forth."

"You manage yourself, do whatever you want to do when you want to do it as a member of a group governed by the guidelines and goals your community and then the group are trying to achieve."

Having examined employee understanding of these schemes how do they operate in practice and what are some of the difficulties or

problems inherent in the functioning of work-related participatory structures in the company?

The Process of Employee Involvement in Work-Related Decisions

In our discussion of the structural features of work-level participation in the fourth chapter, it was pointed out that employee self-management serves as the building block of employee involvement in the company. Although there is no rigid description of jobs in the company every employee has a clear idea as to what is expected of him or her on a regular basis. In the performance of this work role, the employee ultimately is responsible for determining how the job is to be done within defined limits. For example, in the products group, the cabinet maker who cuts the prelaminated boards into various shapes and sizes knows exactly what his job is and nobody tells him how it should be done. Furthermore, he is responsible for organizing his work time but the discretion in this regard is underpinned by a sense of responsibility to his functional community. In the author's view the essence of employee self-management is the opportunity it provides employees to determine their work role behaviour within limits, albeit narrow ones. This is further symbolized by the absence of a supervisor looking over their shoulders. Employees therefore do not have to look busy and consequently, work in a very relaxed atmosphere.

Although the opportunity for self-direction is a source of satisfaction to most of the employees as evident in the preceding chapter, it also generates a lot of responsibility, which stems from the

knowledge that the 'buck stops here'. An employee remarked:

"I feel I take a lot of responsibility with what I do with the clients because nobody is telling me what to do so there is an overwhelming sense of responsibility because you are on your own. Sometimes I sit back and think should somebody be checking this or am I doing this right...The whole responsibility issue I feel is greater under self-management."

This 'overwhelming sense of responsibility' therefore creates a lot of pressure for most of the employees although it is not necessarily seen as negative pressure as evident in this employee's remark:

"Sure there is pressure but I do not feel it is necessarily negative pressure, like stress and distress. I think there is stress connected with it because although you are a member of a work group you are ultimately responsible for your piece of the work unit's task."

The employee responsible for booking long range planning visits also described the pressure associated with her work thus:

"Yes it creates stress. For instance I am the one that takes these calls, the responsibility is great because if we have no clients we obviously would have no work for the design and systems people on the whole. It is a great responsibility - how can I communicate better and then get better booking without doing hot sell."

Asked how they cope with this pressure most of the employees indicated that they talk to other members of their functional community for ideas and suggestions. For example, an employee expressed it this way:

"I handle it by going to other individuals and talk it through with them. I find that probably my best resource here is other people's willingness to listen to ideas that I might have and offer suggestions."

Another employee echoes this feeling thus:

"Self-management is good in that you feel free to innovate. But it is very stressful and the only escape-valve is the preparedness of members of your work group to offer suggestions on how to deal with knotty problems."

Above the level of the individual is the functional community. It was indicated earlier that the company's work is organized into various communities, each comprising about three employees. Employees in a functional community share basic occupational skills or interests and are responsible for making a contribution to the company's overall goal. To ensure this, the author observed that every community is empowered to set production standards, distribute work among the members and determine within a broad framework how the community's work is to be done. For example, members of the design community meet regularly to discuss their quality standards, brainstorm on the general framework of the design of a facility whilst leaving the finer details to the individual designer. It is because of such a nature of work organization that most of the employees perceived a high level of involvement in local-medium decisions in the previous chapter.

At one time when the company was bigger in terms of number of employees, a functional community had about seven or more members. The author was told by the old employees that at that time there was a lot

of bickering because of interpersonal problems created by the feeling that some of the employees had become free riders. This, in their view, affected their level of motivation and production because nobody was willing to raise the issue lest he or she be perceived as wanting to be bossy. However, with a decrease in the size of the company and a corresponding decrease in the size of the functional community these problems have almost been eliminated.

For example, tardiness has been substantially reduced because with a decrease in the size of the community, members could easily assess the work level or the extent to which others were making a contribution to the community's output. This becomes even more important, considering that community members vote on how much raise a member should receive based on his or her contribution to the community and thereby, the company's output. From the preceding discussion the functional community served first, a social control function in that other members more or less served as watch dogs and second, a pressure diffusion function in that it becomes a resource base for the members on which they could freely draw to think through knotty problems in carrying out their work role.

Although the freedom or autonomy inherent in this form of work organization was favourably perceived by the bulk of the employees, a handful of them felt its acephalous nature led to lack of direction and even innovation. An employee angrily captured this feeling in the following remark:

With self-management 3 or 4 people worked together nobody listened to anybody because nobody controlled you. You did whatever you wanted although it might not go well with other people. There should always be one in control to tell us what to do. For the past 15 years we never changed we always did the same thing. We always changed by talk. Too many chiefs at the same time no chief. Too many Indians at the same time no Indian.

In the absence of a community leader, communication becomes a prerequisite for the successful functioning of this form of work organization in order to avoid duplication of effort. The need for communication and the consequences for the lack of it was underlined by an employee thus:

I think you have to be very careful that your communication skills are adequate. You have to keep a dialogue with the functional community all the time so that you know what they are doing, they know what you are doing and no one is doubling up. When the communication fails you can be in trouble. I can recall one particular situation where we felt rightly or wrongly that another person was feeling self-important and in effect became a manager and it doesn't work that way. It makes for bad feelings within the work group.

It is hoped the preceding discussion has painted a picture of the dynamics of a community-based approach to work organization. However, since some of the employees are professionalized to some extent, and a characteristic of professional employees is need for autonomy, they were asked the extent to which they found their membership of functional communities constraining. But before then, an illustration of the nature of the relationship between functional community members is necessary. A member of the design community

described the relationship thus:

'When we have a sketch done for a dental office we take it to a meeting of the design community and we look at the design based on each one of us knowing what the client talked about when he or she was here. For example, Wilson might say from a marketing point of view it would be best if that room was close to the entrance or the business office requires more footage - that stuff I don't know specifically. So when we get together and they feed that in then it will often change the design and to the client's benefit.'

Most of the employees the author interviewed did not see the functional community as curtailing their sense of autonomy which has been reinforced by the self-management concept. As pointed out earlier, employees perceived the functional community as a sort of think tank on which they freely draw ideas and suggestions to improve their work quality as expressed in such remarks:

"In the context of the company I see myself as a member of a functional community. I have freedom with regards to how I do my work and even a broadening of my work role if I can justify it. But when I think of the context in which I work it is a community setting, I work with a team of people and feel free as an individual to input the group. You first need to be a self starter."

"We don't have anything written with the understanding as to who does what and when. When we get together as a work group we are looking to everybody for some input."

"The work group is judged on the basis of its output so although we are responsible for our individual jobs every member's contribution makes the end product so much better."

In this section we have explored the dynamics of the systems of work-related participation and noted that it breeds such problems as stress and free riders especially when the company is big. These problems notwithstanding, these structures have given employees an unusual opportunity to be involved in work-related decisions. However, to improve the effectiveness of work-level participation there is a need for a minimum of direction from the management in lieu of a supervisor, and improved communication among community members.

Respondent Understanding of Organizational Level Participatory Structures

As organizational level participatory structures, 'Right to Share' and 'Town Hall' meetings were perceived as providing employees the opportunity to (a) make an input into decision-making and (b) share management level information. The typical perception of 'Right to share' meetings was conveyed by some employees thus:

"'Right to Share' meeting is our way of getting together as a group and communicating as one. It is a place where I feel I can go if I have issues to be dealt with, if I have good news that I want to share, if I want to ask questions. It provides me with a platform to do all of those things."

"It keeps the two groups, the products group and the office (professional) group together. Because we are in different areas of work we have experiences that they are not aware of and vice-versa. But we are still a group of people (company) therefore we share these experiences and discuss problems in our various work groups and get input from other people."

"For example my husband is purchasing agent. He doesn't know sales, the sales department is very hush, hush, the accounts department does the same. He never knows what is going on. He just does purchasing. At 'Right to Share' meetings everybody shares information and experiences and help others with their work problems."

'Town Hall' meetings on the other hand, was perceived as being "a two-pronged situation."

"I think it gave Wilson an opportunity to share some of the information about major business decisions he wants everybody to own But also had a feel of how people felt. The other aspect of course, kept the walls from growing between the products group and the office people."

"As I see it we have two work groups and it is the coming together of work groups to deal with broader issues, e.g. salaries, new products, major business decisions we want everybody to own."

Although issues dealt with at 'Right to Share' meetings almost always were work-related and therefore narrower than those dealt with at 'Town Hall' meetings they both followed the same format. 'Right to Share' meetings were adopted as a replacement to the dismantled Representative System. When the company was bigger, each functional community elected a member to sit on the representative council. These representatives brought the personnel, social and work-problems of their constituents to the representative council meeting presided over by Wilson where such issues were discussed and decisions made. Asked to evaluate the effectiveness of this form of participation an old employee remarked:

'We did make policy through the representative council meeting especially, policies that affected our well-being here. For example, participatory voting on pay and the flextime. However, there were a lot of problems. For example, if at the meeting council members voted against someone getting holidays or maybe a raise the rep had to tell that person and that usually created tension within the functional community.'

However, a reduction in the size of the company precipitated the abolition of the representative system and instead, all employees meet every other week to discuss work and personnel problems arising from their respective functional communities. 'Town Hall' meetings on the other hand, were held twice or thrice a year.

The Process of Employee Involvement Through Organizational Level Participatory Structures

In addition to understanding the objective behind the participatory structures, an employee's rationale for attending the meeting was assumed to be important since it could affect his or her willingness to be actively involved in the process. An employee of The Group at Cox remarked:

'I want to attend the meetings because I have interest in finding out what issues colleagues might bring up plus I have issues to bring up and also make an input into decisions.'

Another explained his motive for attending meetings thus:

'I simply want to know what is going on. Sometimes I have some issues I want to bring up and get some help

and input. By the same token I want other people to draw on my input or ideas.'

Yet another employee explained why she attends meetings thus:

'I am very much focused on what I do. Although we are a small group we do different things and different issues come up. I go to these meetings to know what others are doing, tell them what I am doing and make a contribution to solving problems that are raised at the meetings.'

With such a high level of motivation to contribute to problem solving and make an input into decisions how do these structures operate to ensure that these ideals are realized?

Organization of the Meeting:

To observe the processes involved in participation at this level the author was allowed to attend a couple of 'Right to Share' meetings and a 'Town Hall' meeting. 'Right to Share' meetings are normally held on Wednesdays and date and time are indicated on the company's calendar. On the other hand, because 'Town Hall' meetings are held infrequently, they are only tentatively indicated and there is no set day for such meetings.

On the morning of a meeting, all employees meet in one of the workshop rooms and sit around a table facing the meeting co-ordinator. Since the intention is to allow everybody the opportunity to fully participate the role of a co-ordinator is rotated. This person is chosen (a) by a draw or (b) his/her volunteering. The co-ordinator asks everybody present to pick a number between 1 to 100 and he also picks

one. Whoever comes closest to the co-ordinator's number wins the opportunity to be the first person to put an issue up for discussion. In a clockwise direction, employees are then asked to list an issue, however employees do not have to put up an issue - they simply can say 'pass'. Against every issue or subject on the board is written the name of the employee who sponsored it. The process goes on until participants have run out of subjects or issues and the list or agenda is closed.

Issues raised for discussion vary depending on whether it is a 'Right to Share' or 'Town Hall' meeting. At the former meeting especially, those attended by the author, issues discussed included plans to purchase a video camera for taping workshops, requests by some dental practitioners to use the company's library, preparation of calendar, whether cheques should be printed with the new logo at that time, workshop fees, whether to send thank you notes to those who refer clients to the company, window sills and theatre floor need painting and whether company goals or missions should be discussed at 'Right to Share' or 'Town Hall' meetings. At the 'Town Hall' meeting on the other hand, issues discussed included budget, salaries, marketing plans, different options for the products group, production target, whether to advertise in trade journals and the type and number of magazines or journals to subscribe to. When the agenda is closed the co-ordinator handpicks a participant to choose which of the issues should be first discussed and his or her name is indicated against that of the sponsor. The sponsor then narrates the nature of the issue and questions are

raised by the other participants for clarification on some points. The issue is then tossed back and forth for a couple of minutes and those who have suggestions raise their hands and are asked by the co-ordinator to do so.

Normally, all employees are supposed to be in absolute agreement before a decision is made otherwise a maximum of three employees could be asked to research the problem further and report back to the group at the next meeting. A decision is then made only when the issue has been satisfactorily discussed and there is consensus so that employees can own the decision. The emphasis on group decision-making has the potential for 'tyranny of the majority.' Employees were therefore asked if they have the right to express dissenting views and thereby the extent to which they are satisfied with consensual decision-making. Two employees remarked thus:

"As a member of the group I have the freedom to say I don't agree with a particular issue. I can't think of a situation but if I didn't agree with something I tend to ask questions. I may not agree 100% but at least I would be offered further explanation and then see where they are coming from."

"I wouldn't say there is a situation of group dictatorship. If I do feel strongly about a decision I do speak out and it is up to me to dig up more information and get the group to see my point of view. If it makes sense it sure will be accepted."

As a critique of consensual decision-making another employee implicitly rejected the idea of 'tyranny of the majority' when she remarked:

"If we have 15 people at a meeting 15 people agreed or nothing. That means if one person says no even if s/he does not know much there was no decision made."

From the author's attendance at some of these meetings, he observed differential participation depending on the nature of the issue being discussed. Employees participated, that is to say, asked questions and made as many suggestions as the President in issues that did not require specialized knowledge. However, employee participation is almost non-existent when it comes to very specialized issues mainly because they did not have the information or knowledge to contribute or felt should be made by the President since it is his money which is behind the company.

On the whole it is the general impression of the author that these conditions curtail the extent of employee involvement in formulating decisions at this level as the President tends to dominate the meetings in many instances, thereby reducing it to information sharing. This impression was reinforced by the employees when they were asked who in their opinion talks most at these meetings. One remarked:

'Everybody can talk as much as they want. Sometimes depending on the context I will say if anybody speaks most it is Wilson. He may put up some major issues, he may be working on some creative ideas he would want to share with us. Over any ten meetings Wilson probably contributes or talks more than anybody.'

Another confirmed the same point thus;

'That depends on the issue under discussion. If finances were being discussed it was people who worked on finance. Most of the times Wilson dominated, got to a point where he said I have to shut up but not always. Sometimes he tended to over participate especially, if he got excited about something.'

Asked to explain why this was so, most of the employees pointed to first, his expertise, and second, the fact that he owns the most shares in the company. Pertaining to the first explanation one of the employees put it this way:

"Wilson does most of the talking because quite often it would be a question that would draw upon his knowledge more. He reads a lot more, more future oriented, he is the one who is out dealing with clients and speaking engagements so he has got more exposure to the outside world. So the prime speaker is Wilson. But he isn't the spokesman, it all depends on what is being discussed."

Another employee remarked:

:"Whoever brings up the issue gives a run down and everybody else can contribute. But we are not all equipped to take part in all decisions and that definitely is the restrictive factor right there. That is why Wilson who is far more knowledgeable a lot of the times made the decision for that reason. He has the expertise."

The President's authority to make decisions stemming from his position as owner-manager was underlined by two employees thus:

'Let's face it final decisions rest with the General Manager or President which Wilson is. If I felt strongly about something and he felt the opposite he will probably go with his experience and financial backing but he probably wouldn't do that without finding out how the group felt also.'

'Wilson is the person primarily responsible because of the funding that he has put into the company and he is the President and so forth and ultimately responsible for the outcome of the company. He only relies on us to reinforce or question what he is doing before he makes a decision on them.'

However, inspite of the differential expertise which invariably leads to differential participation, most of the employees did not see it as necessarily, negative. Instead, they saw it as a learning opportunity.

An employee pointed out that:

"...there will be a tendency if I did not know something about a particular issue I will take that as a learning opportunity and learn about it. Obviously I am handicapped because I cannot input. Sure it is a handicap if you don't have the information but I do not know how important it is all the time. I don't think we all can be expected to know everything all the time."

Another employee underlined the learning opportunity that participation at Town Hall meetings especially provides those without the necessary expertise thus:

"Yes at these meetings we all participate. We are not getting memos from the office upstairs so to speak. Although not all of us have the knowledge when specialized issues like those discussed at Town Hall meetings are being discussed we learn from those who have the expertise then you have knowledge to base your decision by asking the person some questions."

Effectiveness of Participatory Structures at the Organizational Level as Vehicles for Employee Involvement in Decisions

It was earlier indicated that employee involvement is highly dependent on the type of issue being discussed. Policy issues of long range importance are made mostly by the President with little or no input from the employees. For example, one such issue was closing down

the plant section. Most of the employees interviewed agreed that they were all aware that the products group was not faring well, however, the decision to close it was made by the President. An employee remarked:

'There was no decision made at any of our meetings about that issue as such. Wilson came up one day and just said he was kind of sorry he could not carry it on any longer and was just going to close down. In the light of what I said about our meetings that goes against the grain. That's true but I don't know whether a meeting could accomplish anything other than a lot of sadness. We were only a small company and have only got so many dollars behind us and we're losing a lot of dollars... We were all aware of what was going on and knew it was just a matter of time before it was closed.'

However, besides the feeling that 'we are not getting memos from the office upstairs so to speak' is input into formulating decisions, employees at The Group at Cox, unlike most companies in North America, have real involvement in formulating decisions on hiring, purchase of new equipment and working hours - generally work, social and personnel decisions. For example, in the area of hiring, an employee remarked:

'Yea pretty much so. We have had an existence where we did really influence the final decision to employ or hire an employee. I will say that 'committee for the success of the person' makes the decision. This is because I have seen cases where people have not been hired because of the recommendation of the committee. Everybody gave the committee their blessing 'whatever your decision we are comfortable with it'."

Notwithstanding the positive evaluation of 'Right to Share' and 'Town Hall' (scrapped after the closure of the products group) meetings, as

forum for employee involvement, their operation is fraught with problems most of which centre on group decision-making. For example, most of the employees indicated some frustration with indecision, time wastage and the fact that attendance at these meetings often takes them away from their work. However, these problems were perceived as necessary evils inherent in their form of participation. Regarding indecision, some typical remarks were:

'There is an element of indecision coming from the meetings. Certain issues come up and they may never get resolved. But directions have been made in some cases. You might consider that a shortcoming but I don't particularly think so. It is not a case of let's do this and that's all there is to it. Let's try this or I have suggestion to try something else. It can lead to indecision at times.'

'At times I feel the meeting goes too long. Too much discussion without arriving at a decision. But I think it is part of the process.'

'Sure lots of time someone would come and say the same thing over and over again. Because that total freedom was allowed where people could table their issues we probably wasted a lot of time.'

Regarding meetings as time spent away from work another employee pointed out that:

'I feel at times we are sitting at a meeting and feeling stressful because we have work we will want to be doing other than the meeting but because there is no other time for the meeting you have to attend the meeting. Sometimes the meeting affects our work but I can't see how it can be avoided because the meetings are important.'

Important, but not related to the conduct of the meetings, was the concern by some of the employees that for sometime now meetings are not held regularly. If anything they would prefer to:

'Hold meetings on a more regular basis. Right now we have meetings on a hit and miss basis. We have meetings set up on our calendar but quite often these are the days when something else comes up it may be set aside. If anything we should meet more regularly.'

Furthermore, to improve the effectiveness of the meetings it is suggested that a meeting's agenda should be collated and circulated days before the meeting. When this is done it is hoped that considering the level of motivation of the employees to participate they will make the effort to research the various issues. This will ultimately speed up the meeting as employees know what they are talking about and secondly, improve the value of their inputs and thereby the decisional outcome.

From the preceding discussion the practice of workplace democracy at The Group at Cox partially stands up to the critique of radical writers that the whole idea is another managerial attempt to control employees. Whilst this could be absolutely true of other places, workplace democracy in the above company has been used to effectively involve employees in a lot of decisions - a case of integrating individual and organizational goals. An employee succinctly put it this way:

"Primarily, I feel it was not a game but a strategy to run a successful entrepreneurial business. He set up that business very cleverly where there is no lost

time which has become one of the major beefs of companies in the last few years. He had it set up that employees do not see their work as a job-job and therefore do a better work. Whether or not it was for their benefit or his who is to say which came first. I think both are just as important."

In this section our discussion of the dynamics of participation through 'Right to Share' and 'Town Hall' meetings has shown that at 'Right to Share' meetings where issues discussed are mainly work-related, employees have a lot more involvement in formulating decisions. However, at 'Town Hall' meetings where issues discussed are long term and mainly of an economic nature their lack of expertise curtails the extent of their involvement. This is because at these meetings 'Wilson is very much in charge because he understands finances better than anyone around here and more future focused.' This differential participation does not only stem from his expertise but as the employees have recognized, rights of property ownership do confer on the president the power to make such decisions. As forms of participation these meetings are fraught with such problems as indecision and waste of time but have been accepted as the price for consensual decision-making.

The Dynamics of Participation at Firestone

Respondent Understanding of Structures of Work-related Participation

As was the case at The Group at Cox, respondents at Firestone were asked how they understood the objectives of storyboarding and just-in-time. Regarding storyboarding, most of the employees' responses

emphasized communication and problem identification and solving. The former view was expressed thus:

"Communication. To tell us what is going on. Let us know where the company is going, if they are bringing in new machinery they tell us about it. Also little things wrong with our machines they don't know about and they try to get them fixed."

"To let us know what is going on if we are meeting our own tickets. To tell them (management) what is going on on the floor, my special problems. They tell me something, I also tell them something. Communication in a nutshell."

The following remarks are typical of those who saw it as an exercise in problem identification and solving which ultimately enhances the plant's efficiency:

"The purpose is to pick our brain. To get everybody involved in a problem they might have with a certain type of machine and to have everybody's input into what the problems are and how they might be resolved."

"So they can find out what is wrong. Like I know my machine pretty good so that they can find out what is wrong with my machine and on the floor, problems with stock and correct them."

"For the purpose of correcting problems like stock. If you are having problems over and over again it is going to affect quality. To me they mainly want to find out what they can do to get more production."

Thus, unlike the respondents at The Group at Cox, those at Firestone saw storyboarding not as a scheme to enhance their autonomy on the job as such, and like management, as involvement in issues peripheral to the actual performance of their work role. The rationale for respondents'

attendance at meetings and process of employee involvement through storyboarding will be discussed in the next section.

The Process of Involvement Through Storyboarding

Prior to exploring the process of storyboard meetings, respondents were asked why they would attend a storyboard meeting. Motives for attending a meeting varied but two main themes could be identified: (a) a genuine desire to contribute to improving the efficiency of the plant and thereby maintaining their jobs and (b) a break from the monotony of tirebuilding. Pertaining to the first theme, typical respondents remarks were:

'I attend because I want to know what is going on in the plant and the future of the plant. It's good to know what is happening to the ticket and other things whether we gonna be laid off or what. Fair majority of people here will like to see things improved. Anytime we go to meetings and make a suggestion that improves things here without cutting rates it is good for them and good for us.'

'Well before I just didn't care. You show up at work, you do your job and go home. Now it is a case of everybody has got to watch for everybody else. It is not a case of my job is here, its got to be here tomorrow.'

'I think it is more or less a case of management trying to keep their jobs and we trying to keep ours. We are now living from year to year and we all should work as a team to keep this place opened.'

On the other hand, a minority of respondents attend for the latter reason as indicated by such remarks as:

'I will say a small number of people attend the meeting because of the downtime - it is a break from tirebuilding and an early weekend.'

'It is a Friday, it is the last hour, the weekend is ahead of you. A lot of the guys like the hour down. They get paid for sitting there and just listening to whoever is in front telling them what's going on. They getting their average and sitting there doing nothing.'

Although a handful of respondents attend the meetings as a way to escape tirebuilding, the majority of them seemed to have accepted the fact that it is only by their active involvement at these meetings that the objective of storyboarding, the plant's cost - effectiveness, could be achieved. In the next section we will examine the actual operation of this scheme.

Organization of the Meeting:

As a form of employee involvement, storyboard meetings are usually held on Fridays outside the plant in a local motel. At the time of the research, the plant ran a four-shift operation and at the end of the morning shift on Friday, builders on a specific tire machine meet in one of the conference rooms in the motel during the last hour of the shift. At the couple of meetings attended by the author, there were no more than twelve builders per meeting, the storyboard co-ordinator and the department's management team comprising the manager, a foreman and supervisor. The builders sit in a circular manner whilst the management representatives face them.

At the start of the meeting, the meeting co-ordinator, usually the departmental manager, outlines the objectives of the plant and how the tireroom could contribute to realizing these objectives. Usually, these objectives centre on increasing productivity and quality of tires at cost effective prices. He then recounts the progress of the tireroom by way of quality and productivity standards indicating whether it falls short or not of the expectation of the plant's management - which it normally does. Once the main problem areas have been identified, suggestions are requested from the builders on how wastage could be cut down, production speeded up, tire quality improved and stock effectively handled.

For the next few minutes, the tirebuilders at the meeting write down their ideas on index cards supplied by the plant. Each participant can suggest as many ideas as possible and very often they (the builders) do discuss among themselves informally before suggesting an idea. These index cards are then posted on a board by the co-ordinator. Since the builders are under no obligation to suggest an idea it is only a couple of them who actively participate. The author was informed by both the builders and some of the members of the management team that was always the case. This process usually takes about thirty minutes after which the participants take a ten minute break to chit-chat over coffee and doughnuts supplied by the plant.

After the break the departmental manager takes the meeting through its second phase called 'objective countering.' All the suggestions and problems raised by the builders are discussed one after

the other. For example, if a builder raises the problem of faulty brakes on his machine and it had already been detected, the departmental manager or any of his assistants would inform the meeting that particular problem is being worked on. Or if an employee suggests how cycle times could be made consistent, the idea would be tossed around for a while among all the participants including members of the management team. If they (management team) find it impractical the idea is dropped, no matter what the other builders might think. After each and every item had been discussed those considered legitimate by the management team are left on the board which are the issues which would be addressed. This phase takes about thirty minutes after which the meeting is formally brought to an end and the management team would thank the builders for showing up and secondly, participating.

The storyboard co-ordinator then collects the index cards with the acceptable suggestions and problems and in consultation with the departmental management team approaches the relevant departments to rectify the problems or implement the suggestions. To inform the builders about what is being done about their problems and suggestions, a giant board in the tireroom gives a visual 'state of your suggestions and problems' report under the headings 'not addressed', 'being addressed', and 'complete'. The table below illustrates some of the problems raised and suggestions made at meetings attended by the author and how they were handled.

It is the author's impression from attendance at these meetings that they are management dominated and even though the builders do get

the opportunity to participate, the extent of their participation is at the discretion of the management team. This is because they (management) have the power to determine which suggestion should be implemented and which problem is problematic enough to warrant attention. This impression was confirmed by the builders when asked who talks most at the meetings. One of them remarked:

'They are like rap sessions. Management wants to know what is wrong with our machines, they will take it down, anything wrong with our stock and safety concerns. Meetings are mostly ninety percent management talking and ten percent employees trying to get their ideas or problems across.'

Another builder reiterated the same point thus:

'There is participation on the part of the builders. You can ask questions and state your opinion about a problem. Workers do state their opinion if they have something to say. But mostly it is the departmental manager who does most of the talking because he is the one in charge. He shows us all the progress charts and decides on cards removed from the board.'

The differential participation on the part of management is attributable to their position within the organization which does give them not only access to information about the company but also the power to define which problem is legitimate and which suggestion should be accepted. The formalized authority structure represented by the departmental management team 'sets a framework within which participative activities can occur and reduces the number of potential issues' which can be discussed and accepted as a legitimate problem for

57 T.A.M. - P.C. PROBLEMS

PROBLEM	SOLUTION	NOT ADDRESSED	BEING ADDRESSED	COMPLETE
<u>TO: DAN VUKOVICH (ENGINEERING)</u>				
1. High & low pressure, cam set-up - reverse high and low pressure cam	- Reverse cam in program			
2. Will not kick out at cycle on turn-up. -manual repair of B/S will follow through operation when reset is activated - backstitchers go past limit when kicked out.	After kicking out: - stop tools & drum - press reset to home tools - no air			
3. Put jog back in	- Put tread jog in cycle foot switch			
4. Manual backstitcher setup vs. auto. B.S. jam in auto	a. Manual-turn-up with no drum rotation -turn-down with no drum rotation (except with foot pedal) b. Plydown switch (selector) c. Tread stitch forward-reverse -enable (momentary selector) d. Beadsets (momentary selector latched)			

57 T.A.M. - P.C. PROBLEMS

PROBLEM	SOLUTION	NOT ADDRESSED	BEING ADDRESSED	COMPLETE
5. No high speed Tread stitcher-increased speed of drum selectable -high speed selector for high speed on tread stitch	-Push high speed button-pushed once for tread stitch - high speed on drum resets to low speed at end of stitch cycle.			
6. Tread stitchers won't return home when you kick them out. - backstitchers go to home when tread stitch operation is stopped	Kick out tread stitch a. drop off stitchers b. go home c. pick up stitch if cycle foot switch is depressed.			
7. When you recycle M/C your foot pedal won't operate - set-up, plydown and bead set and turn-up separate. -Jump to bead-set step in cycle. -Machine operation (beadset, turn-up, plydown) - Bead set cycle button required	-Push buttons will be installed to enable a jump to bed set or any other required cycle - separate buttons for separate cycles			
<u>TO: WAYNE GIBSON (MAINTENANCE)</u>				
8. Compensators need new brakes	-Wayne Gibson to do on P.M. on all 57 machines			
9. Backstitcher clamp & 2 springs & yoke	-Wayne Gibson to do during P.M. on all 57's.			

57 T.A.M. - P.C. PROBLEMS

PROBLEM	SOLUTION	NOT ADDRESSED	BEING ADDRESSED	COMPLETE
10. 274 - Compensator rewind too long-index.	-Wayne Gibson to adjust timer on rewind (next P.M.)			
11. 274 - Compensator off center (doesn't come around square to A-frame)	-Wayne Gibson to talk to Bob Ibbot (D shift) to schedule for P.M.			
12. Screw liners to shells on all compensators	-metal strip and screw liners to shell -Wayne Gibson to try on one M/C			
13. Compensator same all around -brake pad. -tension on liners	-new brakes on all machines - Wayne Gibson to schedule for P.M.			
14. 271 - Compensator liners irregular	-need new liners P.M. - Wayne Gibson			
15. Longer backstitcher cones	-Wayne Gibson working on it			

appropriate solution. In the next section we will explore the effectiveness of storyboarding as a mechanism for involving employees in problem identification and solving.

Effectiveness of Storyboarding as Vehicle for Employee Involvement

The preceding discussion has painted a picture of a management dominated process which is aimed at harnessing the working knowledge of builders to the task of improving the efficiency of the plant. In a previous section it was shown that while some of the builders perceived storyboarding as a communication strategy others perceived it as a forum for problem identification and solving. To what extent did they perceive the process as being effective in meeting these two objectives? Their perception of the effectiveness of the meetings centred on improvements in quality, maintenance of machinery and generally, keeping them informed about what is going on in the plant. Regarding the maintenance of machinery and improvement in stock, some builders remarked:

'Yes, it has made a lot of improvements in quality as a result of good stock and proper maintenance. At these meetings you tell management problems and they try to fix them. As far as I am concerned I have seen improvement in stock and my machine has not been down for a long time.'

'It has helped because I can now find out everything I want to know and I can get things fixed. I haven't had any problems with stock because management has tried to fix that problem.'

'You can go to the meeting and tell them about your problems and some of them are getting fixed whereas before they did not.'

Other builders who assessed the effectiveness of storyboard meetings in terms of its communicational value remarked:

'Because of these meetings builders feel a little more involved with management because they are communicating what they are doing with the workers. It's not like we are blind. Well we have safety complaints, mechanical and problems with stock. I think these meetings are okay because it makes one feel they care enough about the worker to tell him what's going on.'

'Now I don't have to wait around and ask questions. When we go to these meetings we don't only discuss problems of the guys on the floor but we are told what is going on, whether we have ticket, how much and how the plant is doing overall.'

In spite of the perceived effectiveness of storyboarding most of the builders complained about management's inability or slowness in rectifying problems or implementing suggestions and their dominance of the meetings. Two of the builders remarked almost dejectedly:

'You've got a good idea and they never follow up on that. They can have a few more meetings and show us what they have done, show us some confidence, let the guys know it is not just another bull---- session. Try and pick our brain or something like that and they should come round and show us what they have done.'

'We go to these meetings and give them a lot of good ideas and one-tenth of them have been taken care of and you have no idea where the others have been.'

Another builder deplored management's inaction in this area and the negative impact it could have on their motivation to participate thus:

'Storyboarding is s---- if you don't get results. If you spend all day putting cake in the oven you expect a big cake out. If instead you get running butter out you lose interest. Same with storyboarding. You feed them information and suggestions and don't get anything back you lose interest - why the hell continue.'

Besides management's slowness or inaction in implementing suggestions or rectifying problems, another problem perceived by the builders with storyboarding is their dominance of the meetings. A builder remarked:

'It is a good idea but even when we go to meetings these guys still want to be bosses. If they know everything why do they want to pick our brain. It's gonna be a lot better if they stop feeling important and shooting their mouth.'

In spite of these problems most of the builders the author interviewed would not want it discontinued not only because 'scrap it and they will come up with something similar' but because of the modest improvement it has made possible, namely, as a vehicle for communication, improved stock and proper maintenance of machines. To improve these meetings, and thereby employee confidence in the system, it is our suggestion that management should actively follow through the suggestions and problems of the builders and should be effectively communicated to them. Furthermore, they should relax their dominance of the meeting otherwise builders would continue to perceive it as a management inspired strategy to further control the workers in the name of efficiency, which it is. The respondents have however, grudgingly accepted that, as a price to pay to keep the plant opened and therefore have their jobs.

The Dynamics of Just-in-Time as an Involvement Mechanism at Firestone

In addition to storyboarding, just-in-time or tires on demand (TOD) has been implemented in the plant as a mechanism for better scheduling of materials and elimination of waste which is supposed to have a worker involvement component. Employee involvement is to be realized in builders' scheduling of production flow in order to eliminate waste and to contribute to the plant's goal of cost efficiency. As in our previous discussion of the dynamics of the other participatory structures, employees were asked how they understood the TOD system. The typical responses were:

'Well it is supposed to have minimum inventory and maximum production. Cure needs certain types of tire, they send word to tireroom to build so many tires through the card system.'

'TOD is a system they (management) are using to cut down everything as much as possible. They don't like to have that many tires lying around they don't need.'

'I think it is a cost-efficiency system. Just trying to keep down their costs and keep the place operating. If it operates like it did 15-20 years ago this place won't be here for a year.'

'It is something to do about saving time. Just in time so that you don't overstock the tire.'

Thus employees understood TOD as a cost cutting scheme through inventory control. In the next section we shall paint a picture of its actual operation and assess the extent to which it has involved employees in scheduling on the shopfloor.

Operation of the TOD System in the Tireroom

The sequential interdependence evident in the production process at the plant has meant the use of the TOD system in all the production departments. However, at the time of the research, it had been in place for a considerable period between the cure department and the tireroom and barely started in the other production departments. The heart of the system is the Kanban or TOD cards. Based on market demand the Head Office informs the plant how many tires of the various specifications would be needed, for example, a month. The scheduling department in the plant then breaks this number down on a daily basis. On the basis of how many cure machines are available the scheduling department informs the tireroom through the cure department how many tires of various specifications would be needed to keep the cure room running for an eight hour shift. This information is provided on the TOD cards which are sent to the tireroom by a foreman from the cure room.

On receiving the cards, the tireroom foreman will display the cards on racks in designated areas in the tireroom. Furthermore, he informs the other production departments how many beads, tread and ply would be needed for that period. The supervisor in whose section the cards have been deposited picks them up and informs his crew members of their impending shutdown for TOD tires. If the tire specification to be built is different from the one being built the rapid change team effects the necessary changes for the machine to be used. Normally, the builders who would be building TOD tires are informed at the start of the shift. From the description of the actual operation of the TOD

system the tirebuilders are not really involved in the scheduling process and therefore there is actually no employee involvement component as described in the fourth chapter.

Effectiveness of TOD as Vehicle for Employee Involvement:

To ascertain the effectiveness of TOD in involving builders in scheduling on the shopfloor, they were asked the extent to which the implementation of TOD has enlarged their work-role. Most of the respondents answered in the negative. Some of the typical responses were:

'TOD has not affected the way I build tires. I am a piece-worker and just build tires to make my money. TOD is a concept for management to decrease inventory. It is not a case of me being able to control it. They do control it. We just do what we are told. If they have enough tires of a certain size they just tell me to shut the machine down.'

Another builder remarked:

'There is nothing to involve anybody in. The supervisor gets X number of tires usually at the start of the shift and tells builders how many tires he needs. The builder has nothing to do with the TOD system - he builds the tires required by the supervisor. He is not the one who goes to find out how many tires he has to build. It is the supervisor who gets it. The cards, he is the one who checks the tires, he is the one who switches the machines around for different tires.'

However, if the builders like the system it is not because it has involved them in scheduling as it was supposed to but mainly because

after building the required number of tires they are shut down and still paid their average hourly earning. Secondly, it has helped to keep the tireroom very neat by not stockpiling and thereby the builders having to use only fresh stock which improves the quality of tires. An employee remarked:

'The only good thing is that the guys tend to build faster. For example, if you have 30 tires to build for a shift you build very fast and then get shutdown. You then get your AHE (average hourly earning) and you may be given another job. If you are down TOD you get \$15 an hour but if your machine is down you only get \$10 - \$5 difference right there.'

Most of the employees however, pointed out that the TOD system has helped to keep the place clean and improved the quality of stock and thereby the tire. Two such remarks were:

'It keeps the place a lot cleaner. You don't have a lot of excess rolls. I work at the back end and we usually have rubber way ahead and when the guy comes to use the stock it sticks together. With TOD we don't have this problem. Also you are not letting the tire stay too long on the rack. I think it also ensures better quality from the guys because they use fresh stock.'

'We get better stock because it has not been sitting there forever. Before they had stock sitting on the floor. But right now we have better quality stock for building quality tires.'

Although TOD has proved useful in meeting some managerial goals its operation is fraught with problems. The first is the preoccupation

of the management team with production figures and therefore building above what TOD requires. For example, two employees remarked:

'The TOD system is not working properly because we have a production oriented supervision which is caused by a production centred departmental manager who reports to a production oriented production manager. All they are looking at is numbers and if we have 6,000 ticket per day and build 7,000 the supervisors get a pat on the head. TOD does not matter. If you gonna use TOD use TOD don't use numbers.'

'I think there is a problem with the supervisors. They are trying to get every tire they can to make themselves look good because that is what the company wants. Then in the end we have too many tires in the bank and the whole thing gets screwed up.'

The second concern of most of the builders is better or improved scheduling captured in the following remarks:

'Better scheduling. Right now we are running out of stock and they are there running stock for a machine that is not going to need stock. If this is TOD they should know 3 days ago. They need to plan better.'

'Mostly communication. If I come in here I am supposed to know how many tires I am supposed to build but it is not always that way. There is supposed to be X number of tires in the rack and change to another but often there is either not enough or more than enough.'

To improve the effectiveness of TOD, not as an employee involvement mechanism but as inventory control and waste elimination, there should therefore be better scheduling and attitudes toward supervisors should be changed. They should not be assessed on how many tires they can get out of their crew so that they would stay on TOD.

Our evaluation of storboarding and just-in-time or TOD suggests that worker involvement is very minimal and that participation is achieved only through storyboarding. This confirms our finding in the preceding chapter that Firestone respondents perceived only minimal involvement in the selected local-medium (work-related) decisions. These worker involvement schemes at Firestone's Hamilton plant have been implemented merely as managerial attempts to harness the working knowledge of tirebuilders to cope with the crisis in the marketplace without having to invest in expensive equipment. In this sense, worker involvement or participation is another attempt at ensuring managerial control. The tendency to use participatory schemes at times to reinforce managerial control was also confirmed by Dickson. On the basis of research evidence he found that process or direct participation is related to specialization and inversely to autonomy. He therefore concluded that

"These results are shown to be compatible with the view that participation represents an extension of organizational control over employees rather than the view that participation is a means of employee influence over upper level management."²

Summary:

In this chapter we have explored the dynamics of participation in the two companies with a view to ascertaining (a) the extent of the opportunity and (b) the amount of involvement that can be exerted through the participatory process. It was found that at The Group at

Cox, employees have really been provided opportunities and are actually involved in the formulation of a whole range of decisions except long term economic ones in which they are constrained by lack of expertise and their status as employees as opposed to the President who is a principal shareholder in the company. At Firestone on the other hand, our analysis indicated that although tirebuilders have been provided some amount of opportunity entirely through storyboarding the extent of their involvement is very minimal. It was also shown that this was so because not only the process but the framework for participation still allowed management to retain effective control and thereby limiting the extent of employee involvement. Furthermore, the Firestone respondents seemed to have accepted a linkage between the realization of the participatory structures' objective of cost-efficiency and their jobs.

In the next chapter, we shall recapitulate the objectives of the study reported here and present a summary of our findings and their implications. In addition, we shall discuss the limitations of this study and map out some directions for future research on the topic of workers' participation in management.

Footnotes

- 1 Dickson, J.W. 'Participation As A Means of Organizational Control' Journal of Management Studies, Vol. 18, 1981, p. 162.
2. Ibid, p. 159.

CHAPTER EIGHT

SUMMARY AND CONCLUSIONS

Introduction:

Workers' participation in management is increasingly becoming a popular form of planned organizational change as organizations in both developed and developing countries seek an alternative organizational structure to enhance their economic viability and improve employee quality of work life. So popular is the trend that some researchers on the subject, for example Walker,¹ have been predicting a participatory enterprise as the predominant form of industrial organization in the late twentieth century. To make this a reality, studies are needed which focus on the dynamics and problems involved in the march towards the participatory enterprise. The study reported here is one of the few which explored not only the functioning of participatory structures but the conditions (variables) which account for variation in the form and content of participation as they are embedded in different organizational contexts. The focus of this chapter is to pull the threads together by way of recapping the objectives of the study, findings and their implications, limitations of the study and to suggest directions for future studies on the subject of workers' participation in management.

Summary of the Findings:

Summary of the study's findings will be discussed in relation to the objectives of the study.

Objective One:

The focus of this objective was distilled in the question: "Why does workers' participation in management take certain forms and cover certain areas of management?"² It was qualitatively investigated with the aid of our explanatory framework which depicted the form and content of participation as the outcome of the interaction between variables defined in the framework and furthermore, assumed a congruence between the structure of participation and the organization's context.

At both research sites, nature of product and technology established the basic framework for direct participation. At the Firestone plant, our analysis indicated that the routine technology involved in tire-building was a constraint on the extent to which management could tamper with shopfloor work organization. This was because it had pre-empted opportunities for work-related decision-making and the strategic choice of management was to implement participatory structures peripheral to the work process. At The Group at Cox on the other hand, the non-routine technology in the professional services group and the low mechanization and high interdependence in the products group, provided a structural opportunity which was exploited by the strategic choice of management to implement a direct participatory

structure which deviated from the conventional form of shopfloor work organization.

As a design variable, our analysis demonstrated that environmental uncertainty did not have an independent or direct effect on the structure of participation in the two companies. At the Firestone plant, price and quality competition in the market had the effect of disposing management to modify its organizational structure to seek knowledge from non-traditional sources in the organizational hierarchy to enhance its competitiveness. The eventual form of participation was however, shaped by the nature of technology and the strategic choice of management informed as it was, by its neo-scientific management style. In the case of The Group at Cox, our analysis showed that although the company was also subjected to price and quality competition, its participatory structures were implemented as structural expressions of a democratic management style and the opportunities provided by size and technology. Environmental uncertainty therefore had minimal or no discernible effect.

The level of skill of employees, itself a determinant of technology, conditioned the extent to which employees can handle the expanded task role involved especially in direct participatory forms. At the Firestone plant, our analysis showed that although the routinized technology did not allow for any formal complexity of knowledge the employees have acquired a fund of working knowledge. It was the fund of working knowledge which was harnessed in the identification and solving of shopfloor problems as defined within the context of storyboarding.

At The Group at Cox, both formal and informal knowledge in the professional and products groups have sustained especially employee self-management and the functional communities as direct participatory structures.

Size of the organization was also found to have an influence on participatory structures mainly at the organizational level. At the Firestone plant, the mass and standardized nature of tire-building and the corresponding departmentalization of the manufacturing process has given rise to a bulk of differentiated production workers. Because of the size of the company, workplace problems of employees with different interests cannot be resolved individually and this therefore has made indirect participation through collective bargaining necessary. At The Group at Cox on the other hand, the service orientation of the company has been associated with a small scale operation. In spite of the different skill requirements, the small-size of the company has fostered a relatively undifferentiated workforce. Our analysis demonstrated that size of the company interacted with the strategic choice of management to facilitate the adoption of such organizational level participatory structures as 'Right to Share' and 'Town Hall' meetings.

The general finding regarding the conditions under which certain participatory structures are introduced and maintained within organizational contexts is that the design process is a determinable one underlined by some logic. The preceding variables provided management with structural opportunities on one hand and constraints on the other, but the eventual participatory structure was an expression of the

structural preference of management. This, however, was constrained by the degree of autonomy management has from the parent organization to tamper with the organization's structure. Figure 12 illustrates the weight or influence of the variables in the design process.

Objective Two:

This was concerned with a simple quantitative analysis of respondents' perception of involvement in selected local-medium and distant level decisions as an indication of the extent to which the organizational structure of the two companies had been modified. The basic questions that defined this objective were: a) How much involvement did respondents have in the decisions; b) Do they desire involvement in the selected work-related decisions and c) What was the relation between perceived involvement and such primary individual level outcomes as job satisfaction, job involvement and organizational commitment.

Our analysis showed that the two groups comprising The Group at Cox have different orientation, blue-collar for the products group and white-collar for the professional services group. This was therefore reflected in the low difference in the importance the two main respondent groups attached to the local-medium decisions. However, in those decisions intrinsic to the job ('Work Quality' and 'How Job is Done') the products group attached more importance than the Firestone respondents inspite of their blue-collar background. It was therefore suggested that work experience could weaken orientation. Regarding

perceived involvement in the local-medium decisions although there was no appreciable difference in the average mean scores as had been expected, there was a lot of difference in the perceived involvement in the individual decisions. The little difference there was was explained as a result of the nature of product and technology, company size and management style. In terms of desired involvement it was found that both groups of respondents did not have any revolutionary zeal to control shopfloor work processes. Instead, they both would prefer joint-consultation as the predominant mode of involvement. Furthermore, it was found that at The Group at Cox respondents have more involvement than they desired whereas the Firestone respondents showed the normal trend of desired involvement exceeding perceived involvement. The anomalous finding in the case of The Group at Cox was explained in terms of the satiation thesis which holds that the more involvement employees have the point arises where the less they want.

At the distant level the products group like the Firestone respondents, attached more importance to the extrinsic decisions ('Wage Levels' and 'Improvement in Working Conditions' (e.g. fringe benefits)) than the professional services group. The Group at Cox respondents perceived more involvement in decisions at this level than the Firestone respondents, although both groups were not markedly involved in the formulation of long term economic decisions, such as 'Closures or Mergers' and 'Capital Investments'. Unlike the Firestone plant, where these decisions are not opened to participation, at The Group at Cox, respondent involvement was limited by lack of expertise and even more

importantly, the power that ownership of the company confers on the president to override employee suggestions.

However, in personnel and social decisions such as wages and improvement in working conditions like fringe benefits made at this level, the Firestone respondents perceived more involvement. This was interpreted to mean that collective bargaining was more effective in ensuring employee involvement in those decisions than such participatory structures as 'participatory voting on pay' or 'Town Hall' meetings.

Regarding the relationship of perceived involvement to the primary individual level outcomes, it was found that perceived involvement whether at the distant or local-medium level had very little or no relation to job involvement among both respondent groups. This was explained as a result of the fact that majority of the respondents were married and therefore saw family life as being more important. Furthermore, it was also found that perceived involvement at the organizational level was more related to organizational commitment as shown by The Group at Cox respondents. This was also attributed to the respondents involvement at meetings where issues like the company's future and objectives are discussed and therefore could be serving a commitment mechanism function.

Objective Three:

This objective was concerned with the dynamics or process of participation guided by the question: 'how much of an opportunity is provided and how much influence can be exerted through the participatory

process?"³ The process of participation focused on employee understanding of the structures of participation, the issues discussed, the extent of employee involvement and the problems of participation.

Respondents at the Firestone plant showed a high degree of understanding of the structures of participation. Storyboarding was perceived as a problem identification and solving process as well as a vehicle for communication. Just-in-time on the other hand, was perceived as a system for controlling inventory and cutting down on waste. It was indicated that most of the respondents attended storyboard meetings out of a real interest in contributing to problem identification and solving whereas a handful saw attendance at these meetings as an opportunity to escape tire-building. Our analysis also indicated that most of the respondents at the Firestone plant saw the plant's competitiveness as the only way they could maintain their jobs and therefore supplied the motivation to contribute to the process of problem identification and solving. Regarding employee participation it was pointed out that there is limited participation and it was achieved only through storyboarding.

The minimal participation was explained as not so much a result of respondents' attitudes but their powerlessness. It was demonstrated that the status of the departmental management team and the authority it confers allowed it to define the framework for participation by way of issues or problems discussed as well as solutions accepted and employees were powerlessness to enforce their suggestions. To enhance the motivation of employees and thereby the effectiveness of these meetings

it was suggested that there should be a timely response to their problems and suggestions and furthermore, management should relax their dominance of the meetings.

At The Group at Cox, participation was examined at both shopfloor and organizational levels. At the shopfloor level, employees understood self-management as work role diffusion and autonomy experienced as individuals and as members of a work or functional community. The operation of shopfloor democracy at both the individual and work group levels has jointly provided employees a lot of involvement in work-related decisions which is unusual in many North American companies. Like the traditional form of shopfloor work organization, shopfloor democracy at The Group at Cox has its inherent problems. Most of the employees complained about the stress associated with their work-roles which was engendered by the absence of supervisors or lead persons and therefore 'the buck stops here.' Furthermore, there were co-ordination and communication problems. It was suggested that there should be a minimal amount of direction from the management and clearly defined channels of communication to suppress potential conflicts.

At the organizational level, employees understood 'Right to Share' meetings as a forum for discussing work related problems and 'Town Hall' meetings as a forum for discussing the long range plans of the company as well as its general operation. Our analysis indicated that at 'Right to Share' meetings where issues discussed were mainly work, social and personnel for example, hiring and purchase of equipments, employees have a lot of involvement. However, at the 'Town

Hall' meetings, their involvement was limited not only by their lack of expertise in making economic decisions but also their status as employees as opposed to the President's 'whose dollars are behind the company.' Furthermore, they were powerless to ensure that unpopular decisions made by the President were reversed.

Problems inherent in both forms of organizational level participation were indecision and lengthy meetings arising out of group decision-making and monopolization of the meetings by the President in that 'he talks too much.' To resolve these problems, it was suggested that the agenda for every meeting should be circulated so that employees can think them through before the meeting. This it was believed would not only enhance the quality of the decisional outcome but also cut down on time spent at the meetings. Furthermore, it was suggested that employees should be provided some training in the business concerns of the company so as to question at the least some of the decisions made in that area and be empowered to force the president to reverse some of his decisions.

Implications of the Findings:

The twin focus of this study was the design and functioning of participatory structures and the implications of our findings are discussed in this light. It was noted in the introductory chapter that 'participation has become the most vital problem of our time.' However, in spite of this recognition, there is a paucity of theoretical and empirical knowledge that practising managers could draw upon

to design appropriate participatory structures. Mulder,⁵ has observed that, there are sociopsychological and economic costs attached to the different forms of participation and for that reason, a choice must be made in every concrete situation. A primary finding of this study is the demonstration that certain variables (foremost amongst them technology and the strategic choice of management) that operate on the organization do influence the choice of participatory structure especially in countries where there is no legal prescription for the implementation of participation.

As a comparative case study is not designed to discover universal truths findings from such a study are not sufficient to base any concrete recommendation for the design of participatory structures. However, assuming the hypotheses this study has suggested are verified a body of knowledge could be developed to engineer planned organizational change instead of the current 'seat of the pants' attempts.

Secondly, most direct participatory structures have been designed on the assumption that there is a trade-off between intrinsically satisfying jobs and such extrinsic factors as pay. Our finding that the products group attached more importance to some decisional areas intrinsic to the job compared to the Firestone respondents with whom they share a blue-collar background could mean that work experience can weaken or override a previous orientation. However, the further finding that both the products group and the Firestone respondents attached more importance to the extrinsic decisional areas among the distant level

decisions means that there is no such trade-off between intrinsically satisfying jobs and extrinsic factors at least as far as blue-collar workers are concerned.

The implication of this finding is that the design of direct participatory structures, should not only emphasize intrinsically satisfying jobs, but should also have a built-in mechanism whereby the increased employee responsibility as result of the expanded work-role will be rewarded. It is hoped that this will maintain employee motivation to participate.

Finally, our analysis has shown that employees are willing to participate in decisions important to them. However, our analysis of the dynamics of participation did indicate that the meetings are still dominated by management. The implication of this is that for participation to function effectively management should recognize that the participatory organization is incompatible with the traditional meritocratic conception of authority. Unless management accepts this as the cost of participation they cannot create a climate conducive to participation. Blumberg captured the essence of the preceding argument in his remark that 'the organization that permits participation ultimately produces individuals who are responsible to participation.'⁶

Direction(s) for Future Studies:

The trend towards participation promises to be a permanent feature of the industrial landscape and so may studies on the subject. To enhance our knowledge of the structural and attitudinal problems

inherent in making participation work, it is hoped that future studies on the subject would move in these directions:

(a) This study has suggested hypotheses regarding the design of participatory structures from a comparative case study. Its main weakness however, was that it only identified and qualitatively explored how these design variables could have shaped the form and content of participation in the two companies. Future studies should be concerned with verifying these propositions not with another comparative case study but as Walker suggested, with 'the specification of the relationship between variables and quantification of their operation.'⁷ Hopefully, when studies are conducted in this breath there would be a knowledge base from which to design the best participatory structure for various organizational contexts.

(b) Participatory structures are introduced for a variety of reasons but there is no reason to assume that participation would be introduced if management did not perceive it as having the potential to enhance organizational effectiveness. As with mainstream contingency research, future studies should not only be concerned with ensuring a congruence between participatory structure and organizational context but also comparing the effectiveness of various participatory structures as they are embedded in different organizational contexts.

(c) Besides investigating the structural aspects of participation viz. design, future studies could also explore the factors both within and outside the organization that influence the propensity of employees to participate and how this could be enhanced to create a participatory

consciousness among both employees and management.

(d) The introduction of participation implies a disturbance of the power balance in the organization. The process of participation will undoubtedly be hampered or enhanced depending on how employees perceive the new power balance. For this reason, it will be interesting if future studies would focus on how employees grapple with the effect of participation on the organization's status system, consensus and dissensus and conformity to and deviance from participatory norms. Such micro-level processes are what breathe life into the process of participation in organizations and thereby constitute the human problems of planned organizational change.

(e) A dilemma in job redesign is the issue of enriching the jobs of extrinsically oriented employees, normally blue-collar workers. This study has suggested that a participatory work experience can mitigate blue-collar work experience and conversely, the latter can mitigate the effects of a participatory work experience. Future research should further investigate the nature of this relationship.

Footnotes

1. Walker, K. "Toward the Participatory Enterprise: A European Trend." American Academy of Political and Social Science, 1977, May, vol. 431, pp. 1-11.
2. _____. "Workers' Participation in Management: Concepts and Reality" Paper Presented at the 2nd World Congress of the International Industrial Relations Association, Geneva September 1970, p. 15.
3. Dickson, J. "Participation as a Means of Organizational Control", Journal of Management Studies, 1981, vol. 18, p. 162.
4. Mulder, M. "Power Equalization Through Participation?" Administrative Science Quarterly, 1971, vol. 16, p. 31.
5. Ibid. p. 36.
6. Blumberg, P. Industrial Democracy: The Sociology of Participation (New York: Schocken Books, 1968), p. 109.
7. Walker, K. op. cit., 1970, p. 15.

Data Gathering Instruments(Appendix A)

This questionnaire has been designed to collect information on working people like yourself on how you experience workers' participation in management in your plant or company. The information provided here would only be used as data for my doctoral dissertation to be submitted to McMaster University in partial fulfillment of the requirements for the Ph.D. degree in Sociology. Your responses would be treated as confidentially as possible so do feel free to answer as correctly as possible. Please do not write your name on the questionnaire.

SECTION A

DEMOGRAPHIC BACKGROUND:

Below are a set of questions about your background. All the information provided here are confidential and in no way will the respondent's identity be disclosed. Please answer as correctly as possible.

1. What is your sex? a Male b female
2. How old were you at your last birthday?
 - a. Under 20
 - b. 20-24
 - c. 25-29
 - d. 30-34
 - e. 35-39
 - f. 40-44
 - g. 45-49
 - h. 50 and over.

3. What is your level of education?
 - a. Less than High School
 - b. High School Graduate
 - c. Secretarial/Technical Graduate
 - d. College Graduate
 - e. Graduate or Professional Training.
4. What is your marital status?
 - a. Single
 - b. Married
 - c. Separated
 - d. Divorced
 - e. Widowed.
5. How long have you been with this company?
 - a. less than a year
 - b. A year or more but less than 3 years
 - c. Three years or more but less than 5 years
 - d. Five years or more but less than 7 years
 - e. Seven years or more but less than 10 years
 - f. Ten years or more.
6. What is your main job function?
 - a. Production (manufacturing)
 - b. Administration, personnel
 - c. Technical (like research and development, work study, etc.)
 - d. Sales, marketing, stores, etc.
 - e. Finance, accounting.
7. How long have you held your present position?
 - a. Less than a year
 - b. A year but less than 3 years
 - c. Three years or more but less than 5 years
 - d. Five years or more but less than 7 years
 - e. Seven years or more but less than 10 years.
 - f. Ten years or more.

SECTION B: EXPERIENCE OF DIRECT PARTICIPATION

Below are aspects of work-related decisions a worker like you can influence or affect during the course of performing your task. Please rank the following decision areas from 1 to 9 according to what you feel is very important to you in performing your job. "1" means very important and "9" least important.

1. Changes in the pace of work.

- a. Transfer to another job or department
- b. How job is to be done.
- c. Replacement of personal equipment or hand tools
- d. Assignment of tasks.
- e. Suggestions on how to improve improductivity
- f. Work quality
- g. Improvements in work condiditons of your work group (dust, noise, etc.)
- h. Changes in working hours.

For each of the decisions listed below please indicate the extent to which you are involved and the extent to which you will prefer to be involved.

2. Change in the pace of work

Please check one

- a. I am not involved at all
- b. I am informed about the matter beforehand
- c. I can give my opinion
- d. My opinion is taken into account
- e. I decide on my own.

3. How would you like it to be?

- a. I don't know, have no opinion.
- b. I want to be informed beforehand
- c. I want to give my opinion beforehand
- d. I want my opinion to be taken into account
- e. I want to decide on my own

4. Transfer to another job or department.

- a. I am not involved at all.
- b. I am informed about the matter beforehand
- c. I can give my opinion.
- d. My opinion is taken into account.
- e. I decide on my own.

5. How would you like it to be?

- a. I don't know, have no opinion.
- b. I want to be informed beforehand
- c. I want to give my opinion beforehand
- d. I want my opinion to be taken into account
- e. I want to decide on my own.

6. How job is to be done

Please check one

- a. I am not involved at all. _____
- b. I am informed about the matter beforehand _____
- c. I can give my opinion. _____
- d. My opinion is taken into account. _____
- e. I decide on my own. _____

7. How would you like it to be?

- e. I don't know, have no opinion. _____
- b. I want to be informed about the matter
beforehand. _____
- c. I want to give my opinion beforehand _____
- d. I want my opinion to be taken into account _____
- e. I want to decide on my own _____

8. Replacement of personal equipment or hand tools.

- a. I am not involved at all _____
- b. I am informed about the matter beforehand _____
- c. I can give my opinion _____
- d. My opinion is taken into account _____
- e. I decide on my own _____

9. How would you like it to be?

- a. I don't know, have no opinion. _____
- b. I want to be informed about the matter
beforehand _____
- c. I want to give my opinion beforehand _____
- d. I want my opinion to be taken into account _____
- e. I want to decide on my own _____

10. Assignment of tasks.

- a. I am not involved at all _____
- b. I am informed about the matter beforehand _____
- c. I can give my opinion _____
- d. My opinion is taken into account _____
- e. I decide on my own. _____

11. How would you like it to be?

- a. I don't know, have no opinion. _____
- b. I want to be informed beforehand _____
- c. I want to give my opinion beforehand _____
- d. I want my opinion to be taken into account _____
- e. I want to decide on my own _____

12. Suggestions on how to improve productivity. Please check one

- a. I am not involved at all _____
- b. I am informed about the matter beforehand _____
- c. I can give my opinion _____
- d. My opinion is taken into account _____
- e. I decide on my own. _____

13. How would you like it?

- a. I don't know, have no opinion _____
- b. I want to be informed about the matter
beforehand _____
- c. I want to give my opinion beforehand _____
- d. I want my opinion to be taken into account _____
- e. I want to decide on my own _____

14. Work quality.

- a. I am not involved at all. _____
- b. I am informed about the matter beforehand _____
- c. I can give my opinion _____
- d. My opinion is taken into account _____
- e. I decide on my own. _____

15. How would you like it to be?

- a. I don't know, have no opinion. _____
- b. I want to be informed beforehand. _____
- c. I want to give my opinion beforehand _____
- d. I want my opinion to be taken into account _____
- e. I want to decide on my own _____

16. Improvements in work conditions of your work group
(dust, noise, safety, etc.).

- a. I am not involved at all _____
- b. I am informed about the matter beforehand _____
- c. I can give my opinion _____
- d. My opinion is taken into account _____
- e. I decide on my own. _____

17. How would you like it to be?

- a. I don't know, have no opinion. _____
- b. I want to be informed about the matter
beforehand _____
- c. I want to give my opinion beforehand _____
- d. I want my opinion to be taken into account _____
- e. I want to decide on my own _____

18. Changes in working hours.

Please check one

- a. I am not involved at all _____
- b. I am informed about the matter beforehand _____
- c. I can give my opinion _____
- d. My opinion is taken into account _____
- e. I decide on my own. _____

19. How would you like it to be?

- a. I don't know, have no opinion. _____
- b. I want to be informed about the matter
beforehand _____
- c. I want to give my opinion beforehand _____
- d. I want my opinion to be taken into account _____
- e. I want to decide on my own _____

20. How satisfied are you with the way direct participation in your department or company? (That is to say your taking part in job related decisions which traditionally had been made by your boss/supervisor).

Please check one

- a. Very satisfied _____
- b. Fairly satisfied _____
- c. Neither satisfied nor dissatisfied _____
- d. Fairly dissatisfied _____
- e. Very dissatisfied. _____

SECTION C

Below are a set of decisions which are normally taken above the shopfloor, either by management alone or by management and representatives of workers. Please rank these decisions from 1 to 8 according to what you feel is most important to you and which should therefore be decided by management and representatives of workers or the collectivity of the workforce and management. "1" indicates very important and "8" least important.

1.
 - a. Wage levels.
 - b. Closures or mergers
 - c. Decisions about major changes in the workforce
 - d. Major capital investments (e.g., an additional production line, a new plant, etc.)
 - e. Dismissals and grievances
 - f. Working conditions, e.g., fringe benefits, holidays
 - g. Distribution of profits and pricing policies
 - h. Whether or not work study technique is to be used (e.g., stop watch, time and motion studies).

2. Do you think "Right to Share" or "Town hall" meetings or Collective Bargaining here is a suitable place to represent employee interests against management.

Please check one

- | | |
|-----------------------|-------|
| a. Definitely, yes | _____ |
| b. To a great extent | _____ |
| c. To some extent | _____ |
| d. To a little extent | _____ |
| e. Definitely, not. | _____ |

3. On the whole do you think employees through the union or "Right to Share" and "Town hall" meetings are involved in the decisional outcome in the following decision areas?

a. Wage Levels

Please check one

- | | |
|----------------------|-------|
| 1. Yes, a great deal | _____ |
| 2. Quite a bit | _____ |
| 3. Somewhat | _____ |
| 4. A little | _____ |
| 5. Not at all | _____ |

b. Closures or mergers

- | | |
|----------------------|-------|
| 1. Yes, a great deal | _____ |
| 2. Quite a bit | _____ |
| 3. Somewhat | _____ |
| 4. A little | _____ |
| 5. Not at all | _____ |

c. Decisions about major changes in the workforce.

- | | |
|----------------------|-------|
| 1. Yes, a great deal | _____ |
| 2. Quite a bit | _____ |
| 3. Somewhat | _____ |
| 4. A little | _____ |
| 5. Not at all | _____ |

d. Major capital investments (e.g., an additional production line, etc.)

- | | |
|----------------------|-------|
| 1. Yes, a great deal | _____ |
| 2. Quite a bit | _____ |
| 3. Somewhat | _____ |
| 4. A little | _____ |
| 5. Not at all | _____ |

e. Dismissals and Grievances

Please check one

1. Yes, a great deal
2. Quite a bit
3. Somewhat
4. A little
5. Not at all

f. Working Conditions (e.g., fringe benefits)

1. Yes, a great deal
2. Quite a bit
3. Somewhat
4. A little
5. Not at all

g. Distribution of profits and pricing policies

1. Yes, a great deal
2. Quite a bit
3. Somewhat
4. A little
5. Not at all

h. Whether or not work study technique is to be used
(e.g., stopwatch)

1. Yes, a great deal
2. Quite a bit
3. Somewhat
4. A little
5. Not at all

4. How satisfied are you with the functioning of your local union or "Right to Share" and "Town hall" meetings as mechanism for channelling employee concerns and getting feedback on them.

- a. Very satisfied
- b. Fairly satisfied
- c. Neither satisfied nor dissatisfied
- d. Fairly dissatisfied
- e. Very dissatisfied

Section D: Measurement of Outcome Variables

Workers' participation schemes have been introduced not as ends in themselves but because of the anticipated positive consequences. In this section I am using three outcome variables - job involvement, organizational commitment and job satisfaction to measure the extent to which your perceived involvement in the formulation of decisions has enhanced your quality of work life.

A. Job Involvement: Lodahl and Kejner's Scale

1. The major satisfactions in my life come from my work.
 - a. Strongly agree
 - b. Agree
 - c. Neither agree or disagree
 - d. Disagree
 - e. Strongly disagree.
2. The most important things that happen to me involve my work.
 - a. Strongly agree
 - b. Agree
 - c. Neither agree or disagree
 - d. Disagree
 - e. Strongly disagree.
3. I am really a perfectionist about my work
 - a. Strongly agree
 - b. Agree
 - c. Neither agree or disagree
 - d. Disagree
 - e. Strongly disagree.
4. I live, eat and breathe my job.
 - a. Strongly agree
 - b. Agree
 - c. Neither agree or disagree
 - d. Disagree
 - e. Strongly disagree. .

5. I am very much involved personally in my work.
 - a. Strongly agree
 - b. Agree
 - c. Neither agree or disagree
 - d. Disagree
 - e. Strongly disagree.
6. Most things in life are more important than work.
 - a. Strongly agree
 - b. Agree
 - c. Neither agree or disagree
 - d. Disagree
 - e. Strongly disagree.

B. Organizational Commitment: Porter, Steers and Mowday's Scale

1. I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful.
 - a. Strongly agree
 - b. Agree
 - c. Neither agree or disagree
 - d. Disagree
 - e. Strongly disagree.
2. I find that my values and the organization's values are similar.
 - a. Strongly agree
 - b. Agree
 - c. Neither agree or disagree
 - d. Disagree
 - e. Strongly disagree.
3. It would take very little change in my present circumstances to cause one to leave this organization (R).
 - a. Strongly agree
 - b. Agree
 - c. Neither agree or disagree
 - d. Disagree
 - e. Strongly disagree.

4. I really care about the fate of this organization.
 - a. Strongly agree
 - b. Agree
 - c. Neither agree or disagree
 - d. Disagree
 - e. Strongly disagree.
5. This organization really inspires the very best in me in the way of job performance.
 - a. Strongly agree
 - b. Agree
 - c. Neither agree or disagree
 - d. Disagree
 - e. Strongly disagree.
6. I would accept almost any type of job assignment in order to keep working for this organization.
 - a. Strongly agree
 - b. Agree
 - c. Neither agree or disagree
 - d. Disagree
 - e. Strongly disagree.

C. Job Satisfaction: Job facet satisfaction scale adopted from Loubser and Fullan.

How satisfied are you with the following aspects of your job?

1. Working Conditions.
 - a. Very satisfied
 - b. Fairly satisfied
 - c. Not certain
 - d. Fairly dissatisfied
 - e. Very dissatisfied
2. Opportunities for advancement.
 - a. Very satisfied
 - b. Fairly satisfied
 - c. Not certain
 - d. Fairly dissatisfied
 - e. Very dissatisfied

3. Recognition respondent gets from superior
 - a. Very satisfied
 - b. Fairly satisfied
 - c. Not certain
 - d. Fairly dissatisfied
 - e. Very dissatisfied
4. Amount of pay.
 - a. Very satisfied
 - b. Fairly satisfied
 - c. Not certain
 - d. Fairly dissatisfied
 - e. Very dissatisfied
5. Control over work pace and quality.
 - a. Very satisfied
 - b. Fairly satisfied
 - c. Not certain
 - d. Fairly dissatisfied
 - e. Very dissatisfied
6. Amount of security (i.e., continuous employment)
 - a. Very satisfied
 - b. Fairly satisfied
 - c. Not certain
 - d. Fairly dissatisfied
 - e. Very dissatisfied
7. Amount of decision-making and responsibility.
 - a. Very satisfied
 - b. Fairly satisfied
 - c. Not certain
 - d. Fairly dissatisfied
 - e. Very dissatisfied
8. Extent to which respondent can use his/her skills.
 - a. Very satisfied
 - b. Fairly satisfied
 - c. Not certain
 - d. Fairly dissatisfied
 - e. Very dissatisfied

9. Feeling of accomplishment
- a. Very satisfied
 - b. Fairly satisfied
 - c. Not certain
 - d. Fairly dissatisfied
 - e. Very dissatisfied
10. Amount of contact with other workers.
- a. Very satisfied
 - b. Fairly satisfied
 - c. Not certain
 - d. Fairly dissatisfied
 - e. Very dissatisfied
11. If you had it to do over again, would you take a job with this company, and why?

APPENDIX B-2

INTERVIEW SCHEDULE

This interview represents my continuing interest in learning about how employees like you feel about aspects of your work, the company and structures of participation. The data collected will be used primarily for the author's doctoral dissertation although the information could also be used to improve the quality of worklife employees like yourself enjoy. P.S. The schedule was modified at the appropriate places to apply to the Group at Cox respondents.

A. Technology and the Division of Labour

1. Can you describe the nature of your job?
2. What do you have to know in order to do this kind of work?
3. Do you have any opportunity to make work-related decisions. If so what determines this opportunity?
4. How do you determine work quality? Do you have any control over these factors?
5. What are some of the problems that could arise during the course of performing your job? Which of these problems are beyond your control and which of them can be handled by you?
6. Do you feel any pressure on the job and if so where does it come from?
7. How often do you interact with others in the course of performing your work role? Do you absolutely need these interactions to build a tire?

B. Perception and Experience of Work-Level Participatory Structures:

1. What do you think is the purpose of the work-level participatory structure in the company?
2. Was there any discussion with employees before it was introduced?
3. Have you ever attended a storyboard meeting? How often do you attend these meetings?
4. Why would you attend a meeting?
5. Can you describe what goes on at a storyboard meeting?

6. What are some of the typical issues discussed at storyboard meetings?
7. Have you ever made a suggestion at a storyboard meeting?
What happened to your suggestion and why?
8. Are you satisfied with the way storyboard meetings are currently held?
9. What do your colleagues think of it?
10. Has it enlarged your responsibilities on the job? In what respects?
11. How effective is storyboard meetings as a vehicle for employee involvement? Would it matter to you if it should be discontinued.

C. Employees Experience of Work

1. How important a place does your job occupy in your life besides the need to make money?
2. What are the things you like most and least about working here?
3. How does this place compare with previous places you had worked?
4. What is your idea of an ideal job? How does your present place of work compare with the ideal?
5. In what respects has the introduction of participatory structures enhanced your satisfaction with your company as a place of work? Why is this so?

Appendix B-3

Interview Schedule for Key Organizational Member

Section A: Measurement of Environmental Uncertainty.

In this section I will want to ask some questions meant to provide a description of the techno-economic environment in which your company operates and the extent to which factors present in this environment influenced not only the decision to implement a participatory scheme but also its form and content.

1. What are the main factors that affect demand for products in this industry and your company in particular?
2. Has your company developed strategies to respond to these factors?
3. Can you please describe the market situation for companies operating in this industry in terms of demand elasticity, competition and sales levels?
4. What has been the impact of competition on the organizational structure e.g. delegation of authority?
5. Do you depend on a major customer for your products? In what way(s) has this dependence affected the structure of your company?
6. Does this company have any history of organizational change? that is to say, how often do you tamper with the structural configuration of your company? In those instances can you remember what prompted the change?
7. Under what conditions would you introduce a participatory scheme? Were these conditions the same as those that prompted the introduction of your participatory scheme?
8. Considering the market situation in your industry what do you think should be done to either maintain or expand your company's market share? How did this affect the decision to introduce a participatory structure?

9. What do you consider the dominant competitive issue facing your company? In what way did it affect the form of participation your Company has introduced?
10. Is your industry subjected to frequent changes in the production process? If so how does it affect the skill level of your employees?
11. Do you have any difficulty acquiring the relevant knowledge pertaining to either marketing or manufacturing of your products and how certain is this knowledge if you have it, about the state of the market and technical know-how?
12. Have you deliberately established structures or departments to monitor developments in the marketing or manufacturing areas?

Section B: (Measurement of Strategic Choice or Management Style)

In this section I will want to ask some questions about your structural preferences (management style) by subsuming a series of organizational problems and how you handle them.

1. What kinds of organizational problems confront your company and which of these do you deal with? (Organizational problem as used here refers to difficulties either internal or external to the organization but which have the potential of affecting the continued operation of the company).
2. When these problems arise do you solve them yourself, delegate, consult or hire a specialist?
3. Do you prefer to have line and staff personnel adhere closely to formal job descriptions?
4. Do you put a strong emphasis on the means to get organizational goals accomplished without any regard to formal procedures?
5. Do you subscribe to situational expertise, that is to say allowing employees to make decisions where they are most competent and by-passing formal line authority?
6. How would you describe the company's operating philosophy in terms of how decisions are made and second how the company relates to its employees?
7. Do you as a manager place heavy reliance on formal management training programs or do you prefer heavy reliance on learning by hard knocks?

8. Do you think there is anything like an ideal level of management hierarchy? What do you think can be the advantage or disadvantage of exceeding this minimal number?
9. A company operating in a competitive market might face different problems as opposed to one operating in a monopolistic market. What form of organizational structure will you prefer for these two companies and why?
10. Do you think an organization's structure can be used to solve organizational problems? If so will you ever contemplate modifying the organization's structure and in what way as a response to organizational problems?

SECTION C (Measurement of form, content and level of participation).

The key organizational member was presented with a set of a priori decisions and was requested to indicate the level in the organizational hierarchy where these decisions are made and the mode of employee involvement.

1) Decision List

- a. Establishment of criteria and procedures for hiring and selection.
- b. Extent and category of market to be aimed for.
- c. Capital investment.
- d. Transfer of employees to other jobs within the plant or company.
- e. Determine pace of work.
- f. Determine work quality.
- g. Sale of stock in the company.
- h. Closures or mergers.
- i. Deciding upon major changes in the work force of the company.
- j. Training courses and safety procedures.
- k. Replacement of personal equipment of employees.
- l. Dismissals and grievances.
- m. Wage levels.

- n. Deciding on how can employee perform his job.
- o. Type of manufacturing equipment to buy.
- p. Working hours and holidays.
- q. Deciding on how to improve productivity.
- r. Working conditions.
- s. Task assignment.
- t. Holidays, e.g., maternity, sick leave, etc.

ii) Mode of Involvement

The mode of involvement was represented on a 6-point scale; (a) Employees have no influence in our decision; (b) We would not consult but would consider possible reaction before reaching a decision; (c) We would consult and probably adjust our decision in the light of their view but the decision will be ours; (d) We would negotiate but if unsuccessful would put our decision into effect; (e) We would negotiate and would not proceed until there was an agreement and (f) This is a matter for which we would accept what our employees want to do.

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