Bureaucracy and Total Quality Management:

A Sociological Theory of Clashing

Systems, Moralities, and Knowledge Methods

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ABSTRACT

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by Paul Hess

Bureaucracy has been perhaps the dominant form of organization. Is there an alternative to bureaucracy? This study examines total quality management (TQM) as a new form of organization. The study provides more complete models of bureaucracy and TQM, and a sociological theory.

The methodology is "grounded theory" that formulates theory empirically as well as through a synthesis of existing theory. Both data and themes from literature are organized through the constant comparative method. Four criteria establish whether a model of organizations is complete and new: it must be distinct, comprehensive, coherent, and deep.

It is found that TQM implies a new "customer focused stakeholder organization" when seen in connection to related innovations that extend beyond existing models of TQM, which are all incomplete.

TQM is new because it is *distinct* from Weber's model of bureaucracy based on formal rationality, which is organization by means. TQM operates by a "reflexive rationality:" organization by common goals with the continuous improvement of means through empirical feedback.

The focus on customer ends changes quality control into a general process of improvement to transform each part of the organization: strategy, marketing, innovation, management, design, operations, accounting, human resources, learning networks, and standards. These categories provide a *comprehensive* model.

The theme of reflexive rationality provides *coherence*: the customer focus changes the way the parts of the organization fit together by serving as a common goal in collaboration. The whole system is coordinated for accuracy and simplified for efficiency under "economies of simplicity." This "systems innovation" results from "management by fact" in which root causes are analyzed to find solutions that reduce trade-offs between customer value, profits, equality, and the environment, for win-win solutions between customers, employees, investors, and the public.

Depth is provided through a new morality of common goals and a theory of knowledge, "contextual reasoning," as explained by the theory of "socially embedded knowledge creation" formulated by this study. The theory also provides a generative explanation of TQM adoption and failure.

TABLE OF CONTENTS

LIST OF TABLES

1. INTRODUCTION:

IS THERE A NEW FORM OF ORGANIZATION?

Bureaucracy has been a dominant form of large scale organization in the 20th century, characterized by formal rules about hierarchy, specialization and standards that have manifest in all kinds of organizations including businesses. But most often the term "bureaucracy" is used casually as a complaint about anything that does not work about an organization, rather than as a concept to understand in more depth. "Bureaucracy" is often used narrowly in scope to refer only to government, rigid rules and hierarchy. In the minds of many, bureaucracy seems invincible and inevitable. Missing is clarity about what exactly is bureaucracy, its problems and causes, and original purpose and contributions that are taken for granted.

Since the classic statement on bureaucracy is by Max Weber (1947, 1946), many critiques and empirical studies have yielded a wealth of insight about bureaucracy and other forms of organization. The cumulative result is enough pieces of a puzzle to advance a systematic alternative model of organization and a social theory to support it. Names for this emergent form of organization vary: "network organization" (Eccles and Nohria, 1992), "post-entrepreneurial organization" (Kanter, 1991), "post-bureaucratic organization" (Heckscher 1994) and "collaborative communities" (Adler and Heckscher, 2006) and many others. In addition, there are numerous related empirical trends that contribute to a new picture of economics: "lean production" (Womack, Jones and Roos, 1990), " the new competition (Best, 1990), "flexible specialization" (Piore and Sabel, 1984), and more.

One of the more significant empirical trends in organizations has been total quality management (TQM), or six sigma, that entails a customer focus, scientific methods, employee participation, and process improvement to lower defects and reduce costs. TQM gained attention in the U.S. by 1980 spurred by competition from Japan. Japanese companies are considered the most advanced practitioners of TQM and among the most successful businesses in the world, including Japanese auto makers that continue to gain market share from American companies. American managers have attempted to implement TQM in manufacturing, services, health care, government, education, and other sectors. A whole industry of consultants has emerged to promote "quality" with numerous approaches being offered. Nevertheless, many, if not most, organizations attempting to implement quality have not done so successfully, and it is not always clear whether they understood what TQM entails. While common principles in TQM can be found, there is no single authoritative model of TQM in the United States. In fact, it has not been entirely clear just what TQM is. Is TQM a superficial fad, an approach to quality control, a business strategy, or a new form of organization? The answer could be all of the above.

This research will examine the largest and most contentious possibility, that TQM represents a new form of organization. I will argue that TQM *implie*s a new form of organization when it is joined with related trends like the stakeholder model of the firm, Toyota production system, new accounting principles, and strategic marketing. While these connections to related organizational trends have been made, no systematic organizational model of TQM has emerged.

The case of TQM was selected among many trends because it is perhaps the most highly standardized and popular organizational alternative that has been specified in detail. Nevertheless, connections to just a few other cases will be made to reach toward a more robust model: Silicon Valley, the Japanese model of the firm, green architecture, and the customer focused strategy.

This new form of organization will be called the "customer focused stakeholder organization" or just "customer focused organization" (or firm) for short. The root term of "customer focus" is chosen over TQM and six sigma because of its more transparent meaning and wide agreement that serving customers is the first principle of strategy in TQM and six sigma. The terms "organization" and "firm" indicate the broader context of the whole system. The terms "TQM," "total quality," and "quality" will also be used to refer to the historical experience because the actors used those terms.

RESEACH DESIGN

QUESTIONS

There are five basic research questions that guide this study:

1. Is there a new form of organization that is an alternative to bureaucracy?
2. Does TQM represent a new form of organization?
3. How can organizations be modeled more systematically and what are the criteria for a new form of organization?
4. What theories can help explain the new organizational trends?
5. What is the practical importance and implications of TQM?

GOALS

There are two major goals to the research:

1. To create a sociological theory to explain the internal functioning of organizations and external causes and environment.
2. To create models of organizations for both TQM and bureaucracy.

Sociological Theory

A new sociological theory is needed that corresponds to the new empirical trends in organizations and to critique Weber's theory of bureaucracy. The "theory of socially embedded knowledge creation" provides an alternative theory to Weber's assumptions about social structure, knowledge and morality that assume that bureaucracy is inevitable. This study builds on Durkheim, Granovetter, Unger and others to formulate a theory of social structure and change. This study develops a generative explanatory theory that acknowledges human agency and moral choices as an alternative to functionalist, structuralist and evolutionary theory. This theory also provides a sociological alternative to economic explanation of organizations. An analytic framework is created to guide empirical investigation to distinguish outcomes from causes through five categories:

- specific outcomes
- the ends of actors
- structures
- processes
- methods of creating knowledge

Model of Organizations

This study uses four categories for a complete model of organizations to assess whether a form of organization is new: distinct, coherent, deep, and comprehensive.

Distinct: For a form of organization to be new it must be precisely distinguished from another paradigm. This study distinguishes TQM and the customer focused organization from bureaucracy and its manifestation in the economist's model of the firm.

Coherent: A model of organization must possess some apparent common theme or few simple themes so that it makes sense as a whole. The overarching theme of the new organization is "reflexive rationality" adapted from Teubner (1983). Reflexive rationality is defined by this study as organization by common goals with empirical feedback to improve means. There are three kinds of common goals concerning the needs of: customers, immediate stakeholders like employees and investors, and the public or common good. Empirical feedback includes the use of scientific methods for "management by fact" as a new basis of legitimacy. The improvement of means is the adjustment of organizational routines to human ends to thus overcome bureaucratic rules that become ends in themselves to create an "iron cage." The furthest implication of reflexive rationality is that by continuously analyzing problems deeper causes are found in systems that lead to innovation in systems that involve win-win solutions to create a common good. This is the logic of the "ideal type" of reflexive rationality, however far short it might fall in practice.

Comprehensive: A complete model of organization possesses enough categories to encompass all the parts of an organization. This model will show how TQM changes the role of each function and how each fits together: strategy, marketing, management process, design, operations, accounting, innovation, division of labor, learning networks, standards and morality. The common goal of satisfying customers coordinates functions horizontally, vertically, and locally.

Depth: Organizations are determined by their basic assumptions about ontology, knowledge and morality. For a full model of organizations many dimensions of structure are acknowledged: centralized and decentralized, internalized and external, which are examined in terms of forms of knowledge: standard, operational, tacit and implicit. Organization processes are also examined in terms of methods of creating knowledge, including: interpretation, iteration, synthesis, and recombination. These forms and methods of knowledge comprise "contextual reasoning." Knowledge and social structure is explained under the sociological theory.

METHODOLOGY

These research goals require a methodology that is exploratory and designed to formulate theory, not to test and confirm hypotheses based on a given theory. This exploratory research began with open-ended questions: Is there an alternative to bureaucracy? Is TQM a new form of organization? The objective is thus to generate theory that can be used for further empirical research. The research utilizes both literature and data to formulate theory and find empirical themes

The Methodological Problem

The research entails a systematic contrast between organizational paradigms but the contrast is made difficult because these paradigms are not stated at the same level or with a common language. Weber's theory of bureaucracy and TQM are completely different phenomena from different time periods, stated at opposite levels of generality and detail, and clashing on most content. Weber presented general structures of bureaucracy like hierarchy, specialization, formal rules, and formal rationality, and focused on things like "capital accounting." The field of TQM, on the other hand, is

articulated at a level of very detailed techniques with some general principles. TQM language includes customer value, process improvement, scientific analysis, statistical process control, and employee participation. There are, nevertheless, some common points like the need for objective standards, but the gap between these paradigms is enormous.

If representatives of these paradigms could talk, for example, Weber and TQM guru Deming, what would they have to say-- and learn from--each other? If each person and paradigm had to learn to talk to the other in its own terms, the understanding of each paradigm might be expanded: bureaucracy in the direction of detail and TQM in the direction of general categories that make sense of its many technical details. By way of contrast, the basic assumptions of each might become more explicit and less taken for granted. Thus a full critique of bureaucracy can be made and a fuller model of TQM as a form of organization can take shape. However, to compare and contrast these organizational paradigms a system of categories must be invented to bridge the gaps between general and specific features and between different content. Creating these categories requires a research design of grounded theory with its constant comparative method. The central task of this research is to organize these categories.

Methods

Grounded theory (Strauss and Corbin, 1998; Glaser and Strauss, 1967) formulates theory beginning with empirical observation. It specifically uses the "constant comparative" method to organize facts into categories, and consolidate categories with theory. The two aspects of this method are substantive and formal theory. The substantive theory begins with the empirical observation of TQM cases, history and texts as artifacts

of the TQM phenomena, and closely related organizational trends. In this study, these observations are classified in ways consistent with the terms and self-understanding of actors. The second part, formal theory, seeks wider and deeper understanding with theory. Formal theory begins with theoretical constructs that are used to create categories to organize data. Thus Weber's theory of bureaucracy and theories of knowledge creation, for example, are also used to create categories to make sense of TQM. The key bridge is Teubner's concept of reflexive rationality that is stated at the same level as Weber but is compatible with the content of TQM—however distant it seemed at first. Thus, bridges are built between existing theory and empirical data by creating categories that reconcile different levels of abstraction and areas of inquiry, through the constant comparative method that mixes and matches ideas and data until it all makes sense as a whole.

To formulate these categories and details this study created a particular tool to be used within the constant comparative method. Tables compare paradigms, not only to display ideas, but to formulate categories. The system of comparing and contrasting bureaucracy and TQM elicits categories with which to model organizations and brings to light implicit assumptions. Each paradigm often uses different categories that are not comparable at the same level but through comparison one can state the equivalent category on the other side and expand the model of the other paradigm. For example, managers in bureaucracy can treat "individuals" as the problem, whereas TQM manages treat "systems complexity" as the problem, thus the category, "basic problem" was created to encompass "people" and "systems." What is equivalent is often opposite, so dissimilar things are related through general categories and placed on the same level to even though each paradigm can ask a different question or see different problems. This

procedure creates a dialogue between paradigms in which each lends the other its categories to expand its understanding of itself. In addition, the small boxes in the tables also force issues to be stated simply and clearly while providing the reader a summary and guide to the relationships between themes.

A limitation of the study is that there are no exhaustive case studies of firms that examine the implementation of TQM in depth according to all the criteria of the model of customer focused organization. These would require site visits at the firms to observe their process control data, physical layouts, and multiple interviews to triangulate. It was beyond the resources of this study to research implementation in depth.

OVERVIEW OF CHAPTERS

The next three chapters are on theory. This series of chapters begins with the most empirically specific topic, TQM, and moves toward the most general and theoretical, social theory, according to the method of grounded theory.

2. TQM Theory: Is TQM a New Form of Organization?

This chapter provides an initial definition of what is commonly meant by "TQM" and some historical background. This chapter reviews literature on TQM that addresses whether it is a new form of organization, including practitioner texts and social science perspectives. Although some argue that TQM does represent a new model of organization there is no complete model, so organizational theory is searched next for categories to build a model.

3. Organization Theory: Bureaucracy versus Customer Focused Organization: From Formal to Reflexive Rationality

This chapter provides a thorough critique of bureaucracy and its formal rationality and outlines an alternative reflexive rationality (Teubner, 1983). An overview of the customer focused organization is provided here beginning with a contrast between the stockholder and stakeholder firm. The knowledge method of organizations is explained in the next chapter.

4. Social Theory: Socially Embedded Knowledge Creation

This chapter examines the theoretical foundations of bureaucracy and much of social science theory, including economic theory. The assumptions of universalism, objectivism, epistemological rationalism and "fragmented empiricism" are questioned. These assumptions can also be found in social science explanations with a deep logic of evolution, functionalism and structuralism.

An alternative theory is derived from Durkheim, Habermas, Bourdieu, Bellah, Unger, Granovetter, Sabel, and Nonaka and Takeuchi to formulate the "theory of socially embedded knowledge creation." This perspective provides a theory of social structure based on dual embeddedness, contextual forms of knowledge, and contextual reasoning in methods of creating knowledge. The generative theory of explanation is contrasted to deep logic and an analytic methodology provided.

The following chapters show how TQM uses contextual reasoning to formulate ends and coordinate means reflexively across the organization.

5. Strategy: Customer Focus: The Marketing Driven Stakeholder Firm

A sociological conception of strategy examines the social goals of customers, employees, investors and the public. This chapter considers satisfying customers as a way to create the broadest common goal and means of business success. The leading case is the Japanese market share strategy of the employee-centered firm. But Porter argues that the Japanese firm and TQM fail to address the question of which customers to focus on. The best parts of these strategies are recombined into a new strategy of "customer share" that focuses on some customers and balances commitments to stakeholders.

The customer focus provides a common goal to coordinate the whole organizational system rather than focus on unit efficiency. The task of the remaining chapters is to explain this coordination under reflexive rationality.

6. Management Process: Management by Fact

Quality Control Meets the Shop Floor and Management.

Managers under bureaucracy are typically controlling, distant, or abstract. Quality managers shift from controlling and blaming people to managing the system. A well defined management process requires that managers operationalize goals into action plans to facilitate implementation of TQM. Managers are supposed to be more hands-on and evaluate the effectiveness of their own processes, for example, through employee feedback. Managers are to exemplify the principle of "management by fact:" legitimate decisions are made using scientific methods to discover what customers need and to improve processes. Management is an activity in which everyone can participate by inspecting their own work and spending a portion of their time improving it and interacting with customers.

7. Design: Collaborative Design: Marketing, Engineering and Manufacturing

Specialization under bureaucracy fragments functions into hierarchical "silos." TQM remedies this problem by coordinating functions horizontally around customer needs. Different functions collaborate in the design stage to translate customer needs into product features and product processes. The design stage provides the greatest leverage to prevent problems and control quality. There are four processes: collaborative design, concept engineering, robust design, and target costing. The intended results are greater accuracy, speed, reliability and lower costs. These objectives are also shared with operations.

8. Operations Meets Accounting: Managing Systems for Economies of Simplicity

Operations are coordinated horizontally by the pull of customer demands for accurate and efficient delivery of products and services. The classic case is the just-in-time or Toyota production system founded on four basic principles of managing systems: *simplicity* of the system, *flexibility* of machines and people, *reliability* of processes, and *transparency* of information for immediate feedback and reflexive adjustment of means. Implied is a new "economies of simplicity" of the whole system.

Supporting horizontal processes is a new kind of accounting that replaces the core of bureaucracy that has been perhaps the most significant barrier to TQM: the formal rules about accounting that Weber deemed so central and that have been used as "remote control" over people and to institutionalize economies of scale (Kaplan and Johnson, 1987; Johnson, 1991).

9. Innovation: Systems Innovation

This chapter calls into question the dichotomy of leap versus incremental innovation of TQM. I argue that the real issue is individual versus systems innovation. TQM implies a continuous process of innovation in the systems of customers and organizations, drawing upon many people in collaboration with customers. Ideas for innovation are exchanged more freely under a more integrated division of labor.

10. Division of Labor: Integrated Human Resources

This chapter examines how the bureaucratic principle of detailed specialization can be replaced with that of integration of the division of labor and human resources. Integration breaks down the separation of concept and execution to create "dual work" to improve processes. Integration involves cross functional meetings and the creation of cross functional people who are generalists with experience in many parts of the organization. The Japanese "ranking hierarchy" is examined as a way to motivate individuals and create cooperation. The division of labor can also integrate at the inter-firm level to break down the separation between customers and producers.

11. Learning Institutions: Associations for Societal Networking

The inter-firm dimension finds firms as customers of TQM collaborating as producers to collectively create and receive TQM knowledge. This chapter critiques one of the pillars of the economist's model of the firm--transactions cost economics--that states that hierarchy and markets are inevitable (Williamson, 1985). The case of TQM provides an example of a third option based on networks and associations of firms that created total quality in Japan. The U.S, in contrast, suffered from a weaker market-based

individual consultants model. One of the products of the collective approach is shared standards of models of TQM.

12. Standards: Enabling Knowledge: Quality Awards

Standards in Japan versus the US reflect different conceptions of TQM, society and knowledge. Quality award criteria are examined as standards and compared for how much each is seen as enabling knowledge versus constraining rules, as guiding versus relativistic, as creating winners versus selecting winners, and as objective versus contextual in its evaluation process. The use of technical standards also reflects morality.

13. Morality & Identity: Common Goals and Integrity

Morality and social identities are part of the "intangibles" of organizational culture and informal organization that are examined here along with explicit human resource practices. Bureaucracy relies on an individual morality and the American context adds assumptions about groups and intelligence that create problems for TQM.

Reflexive rationality, on the other hand, has a morality of common goals for customers, stakeholders, and the public. Goals are shaped by "social identities" based on assumptions of individualism, stereotypes, equality and openness to learning from others. In addition, social relations are examined in terms of "natural identities" that concern the relation to nature as the world of facts and the relation of the body to action and emotions. Moral identities have also shaped how well TQM has been received and implemented in the US.

14. TQM In America

This chapter reviews studies of the extent of TQM adoption in the US and some of its limits and problems. Three explanations of adoption of TQM are considered:

market economic structures, bureaucratic isomorphism, and social embeddedness. Under social embeddedness are three patterns: no learning due to nationalism or cultural identity; limited learning due to distortions from the old paradigm; and successful learning through collective associations. These patterns are further examined in a case study.

15. Conclusion: Reflexive Rationality: Toward a Common Good

The conclusion examines the contributions, significance and limitations of the study. The significant implication of reflexive rationality to create a common good is considered in light of the limits of the process of learning TQM, which is largely inductive and lacking in systems theory of organizations. Recommendations are made to expand TQM toward this more complete model of customer focused stakeholder organization. Also included are suggestions for academic fields to create systems theories of organizations that are more sociological, inter-disciplinary, and cross-functional to integrate the business school curriculum.

2. TQM THEORY:

IS TQM A NEW FORM OF ORGANIZATION?

Definition

While there is no single definition or authoritative model of TQM among practitioners or scholars, there is no point to defining the word "quality" because that is too narrow a task. Nevertheless, it is possible provide a simple description that covers themes shared by major quality approaches. There are four overall themes in TQM: customer focus, process improvement, total participation, and scientific methods.

Customer value is the goal of meeting the all the requirements of customers, "quality" in the broadest sense of the total package customers desire: features, cost, service, delivery time, reliability, etc.

Process improvement aims at improving all aspects of work, beginning with preventing problems and also innovation in systems of work. "Quality" in the narrower sense of reliability or lack of defects is a key strategic issue because defects are a major cause of costs through wasted materials, time for rework, delivery delays and dissatisfied customers. The objectives are to react to problems immediately and seek innovation as is part of the philosophy of "continuous improvement" or kaizen.

Scientific method is used in the core improvement process: the Plan Do Check Act cycle (PDCA) that comes with a set of tools for data analysis. A crucial framework of interpretation is statistical theory, used with statistical process control (SPC) that determines the state of systems through measuring variation. Variation is called the enemy of quality because variation causes defects. For example, the extent of variation in the size of mechanically moving parts determines whether they fit together and therefore perform

as well or as reliably. If it were not for this knowledge, American cars would break down as they did before competition from Japan, and computer chip manufacturing scrap rates would still be astronomical and costs would not have fallen as they have. "Management by fact" is the justification for all decisions that must answer these questions about ends and means: Do the customers really want this feature? What is the capacity of processes to meet customer requirements?

Total participation (Shiba, et all 1993). The "total" in total quality means that all employees should be involved in improving quality and process improvement, not just quality specialists and engineers. This signifies a qualitative shift as well: from inspection to prevention of problems, from reacting to symptoms to dealing with causes. Employees from different parts of the organization are necessary to address large problems with causes found throughout the organizational system.

Background

Some foundational ideas that would become TQM originated in the 1920's at ATT's telephone division, Bell, and its manufacturing branch, Western Electric. There, pioneering statistician Walter Shewhart developed ways to improve the reliability of production with sampling methods to inspect output and diagnose systemic causes. His disciples at Hawthorne included William Edwards Deming and Joseph Juran who would become two of several top American quality gurus. These methods were widely applied to production during World War Two yet were quickly abandoned after the war when the pent-up demand for consumer goods required quantity fast and a lack of international competition did not keep standards high. At exactly this time the U.S. occupation government in Japan ordered the Japanese phone company NTT to improve reliability and

invited American experts to tell them how. Japanese industrial leaders receptively studied the methods and educated their own people across many industries. The Japanese studied and expanded upon these ideas, and invented others until the body of knowledge evolved into what is now known as total quality control and TQM.

It was not until 1980 that American businesses began taking widespread interest in quality improvement in response largely to competition from Japan. An NBC television interview with W.E. Deming in 1980 gave more visibility to the issue and began the resurgence of the quality movement in the United States. By the early 1990's TQM was among the top business trends and interest had spread to all kinds of organizations, such as, education, health care, and government. Moreover, the impact of TQM concepts rippled outward under different names for a widespread impact on business (Cole 1999; Main, 1994). By the end of the century, the term "six sigma" began to replace TQM and the name for the quality movement.

The Confusion

There are many names for the same things or things that all fit together: total quality control, kaizen, continuous quality improvement, statistical process control, just in time production, lean production, reengineering, quality function deployment, policy deployment, Hoshin management, etc. This study will show that many techniques and ideas are related but this can only be understood through a conceptual framework that makes the connections beyond the particular words that are used. Absent this framework, all the trends and programs appear to be disconnected "fads," which imply that the actors do not know what they are doing. But the actors in business understand to varying degrees, just as scholarly observers understand to varying degrees.

There are four reasons that there are so many different names for things:

- Trends are broken down into specific topics and programs in attempts to be more easily understood.
- The names change by location and level of generality: Total quality control in Japan is total quality management in the USA. The Toyota production system is also known as just-in-time in all countries and lean production in the USA. Nationalizing labels can be a matter of legitimacy.
- The proliferation of terms is driven by the market structure of consultancies that need to differentiate their products. Similarly, academics generally work individually to distinguish their ideas. In both cases, ground is gained by criticizing past efforts in ways that downplay continuity and the accumulation of knowledge.
- New names are created for new phases of learning and to break with associations with failed programs of the past. The most dominant term of TQM fell out of favor by the mid to late 1990s and was replaced by the term "six sigma" which is still basically the same thing. Nevertheless, the terms TQM and total quality will still be used as empirical references because they have been the most common terms used historically used by the actors.

To understand the substance beneath the labels and slogans, the most substantial works on TQM are reviewed. Works are reviewed if they have relevance to the question of whether TQM is a new form of organization. The following review of TQM literature covers both practitioner literature and scholarly literature.