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ABSTRACT

While the Total Quality Management programs that were extremely popular a decade ago had many successes, there also were a large number of failures. This paper lays out some theoretical reasons for why these failures might have occurred. Our methodology is the application of the theories of the "Austrian" economists, including Ludwig von Mises, F.A. Hayek, and Murray N. Rothbard. We apply both the Austrian theory of the firm, as well as the economic calculation theories that Mises and Hayek developed, in order to explain why some TQM failures might have occurred.

INTRODUCTION

During the late 1980s and early-to-mid 1990s, Total Quality Management became a powerful force among those who believed that management strategies in the United States needed overhauling. Chiles and Choi write that "the principles of TQM have had a profound and unparalleled impact on modern business history," but that it also lacked a strong place in the management academic literature (2000, 1-2). Citing objections to things like "the slogans, buzzwords, evangelism, and faddishness that seem to have characterized TQM," Chiles and Choi not that the real problem was that management researchers lacked a "theoretical rudder" to guide their analysis. (2000, 2)

Chiles and Choi attempt to provide a theoretical viewpoint for TQM in their application of Austrian Economic Theory, paying special attention to the Austrian emphasis upon discovery and market processes that Kirzner (1973), Lachmann (1976) and others developed. Yet, if there exists a vacuum in the literature that gives a strong theoretical basis for TQM, there is even less theory available to explain TQM failures and successes. According to Morris and Haigh (1996, 93) the failure rate of TQM might be as high as 80 percent, which is surprising, given the strong support for TQM across the various sectors of American business. However, the literature does not provide a common thread upon which to base TQM's alleged large failure rate.

For the most part, the reasons for failures (and successes) discussed in the literature seem to be limited to each individual case, an issue based upon the question of "What did management do wrong (or right) in this situation?" Yet, it would seem that examining TQM failures/successes without employing a theoretical basis would also imply that researchers lack a

strong "rudder" to guide them through their analysis. Thus, using the same line of reasoning as do Chiles and Choi, we attempt to employ different (but similar) methodological tools to determining why TQM programs might fail. The first is known as Transactions Cost Analysis (TCA), it has its beginning with Ronald Coase (1937), with Williamson (1975, 1985, 1996), Hayek (1945), Klein, Crawford and Alchian (1978) and others building upon Coase's foundation.

The second theoretical approach we will take will be to employ analysis based upon Economic Calculation as articulated by Mises (1944, 1975, 1981, and 1998) and expanded by Rothbard (1993). While Mises and his students used the concept of Economic Calculation primarily as a mechanism through which one could interpret and predict the failures of the socialist economy, we believe that it also is useful in examining the *intra* workings of an organization, be it a business, non-profit entity, or government agency.

We organize our paper in the following way. First, we examine TQM and present some of the literature describing it, along with examining how the TQM paradigm fits within the Austrian Economic view of market processes, as outlined by Chiles and Choi. Second, we apply TCA and Austrian (and especially Misesian) analysis to the firm in general and specifically in interpreting the success and failure of attempts to implement TQM programs in various organizations. Third, we conclude that the Austrian analysis gives a strong theoretical basis to why TQM programs might fail – or be successful.

TOTAL QUALITY MANAGEMENT AND THE AUSTRIAN ECONOMICS PARADIGM

According to Deming (1986) any organization can implement a TQM program through a 14-step method. The steps are:

> 1. Create constancy of purpose for improvement of product and service. Constancy of purpose requires innovation, investment in research and education, continuous improvement of product and service, maintenance of equipment, furniture and fixtures, and new aids to production.
>
> 2. Adopt the new philosophy. Management must undergo a transformation and begin to believe in quality products and services. 3. Cease dependence on mass inspection. Inspect products and services only enough to be able to identify ways to improve the process.
>
> 4. End the practice of awarding business on price tag alone. The lowest priced goods are not always the highest quality; choose a supplier based on its record of improvement and then make a long-term commitment to it.
>
> 5. Improve constantly and forever the system of product and service. Improvement is not a one-time effort; management is responsible for leading the organization into the practice of continual improvement in quality and productivity.

6. Institute training and retraining. Workers need to know how to do their jobs correctly even if they need to learn new skills.

7. Institute leadership. Leadership is the job of management. Managers have the responsibility to discover the barriers that prevent staff from taking pride in what they do. The staff will know what those barriers are.

8. Drive out fear. People often fear reprisal if they "make waves" at work. Managers need to create an environment where workers can express concerns with confidence.

9. Break down barriers between staff areas. Managers should promote teamwork by helping staff in different areas/departments work together. Fostering interrelationships among departments encourages higher quality decision-making.

10. Eliminate slogans, exhortations, and targets for the workforce. Using slogans alone, without an investigation into the processes of the workplace, can be offensive to workers because they imply that a better job could be done. Managers need to learn real ways of motivating people in their organizations.

11. Eliminate numerical quotas. Quotas impede quality more than any other working condition; they leave no room for improvement. Workers need the flexibility to give customers the level of service they need.

12. Remove barriers to pride of workmanship. Give workers respect and feedback about how they are doing their jobs.

13. Institute a vigorous program of education and retraining. With continuous improvement, job descriptions will change. As a result, employees need to be educated and retrained so they will be successful at new job responsibilities.

14. Take action to accomplish the transformation. Management must work as a team to carry out the previous 13 steps.

At one level, these points seem to be a common sense approach to production; the workplace should be one in which goods and services of high quality are created, as opposed to it being a haven for strife and substandard production methods and generally a negative work atmosphere. In fact, most managers would agree on most if not all of the points, even if their particular workplaces do not meet the TQM criteria.

The obvious issue, then, is how a particular firm or organization can create that ideal TQM setting, and that includes being able to analyze the workings of an organization through a consistent point of view. To put it another way, the workplace would have to be organized – or reorganized – in order to accommodate the installation of the “Fourteen Points.” Thus, the simple question would be: “How do we do that?” Furthermore, in order to implement a successful TQM program within an organization, one would have to understand the nature of the

particular set of constraints that the managers and employees face that would keep the TQM goals from being realized.

Wruck and Jensen (1998) write that TQM works by increasing the productivity both of labor and of capital. They say that TQM is characterized by the following three features:

> (1) it is science-based in the sense that individuals at all levels of the organization are trained to use scientific method in everyday decision-making;
> (2) it is non-hierarchical insofar as it provides a process for decentralizing decision-making in ways that do not correspond to the traditional corporate hierarchy;
> (3) it is non-market-oriented in that it does not use prices or formal exchange mechanisms, such as transfer pricing systems, to motivate cooperation or the transfer of decision rights.

Chiles and Choi believe that the best way to interpret the workplace reorganization that comes through TQM is through what they call "Market Process Economics" as articulated by the Austrian School. One of the attitudes that TQM programs have tried to change is how people within organizations interact with each other. Employees are urged to think of each other as customers, not co-workers. People in the office setting are encouraged to see the workplace as a market that functions just as a retail market might operate. In other words, the workplace is viewed as a quasi-market, albeit one that works *without real prices* governing the exchanges between individuals within that singular working environment. In contrast to Wruck and Jensen's claim, TQM is market-oriented in one sense, but leaves out the necessary elements of market exchange, namely prices and private property.

Take a simple example in which a manager asks her assistant to compose a letter to a customer outside the firm. While one assumes that the assistant is being paid a salary or wage by the firm, payment is not offered for that specific task at that time. Instead, payment is made commensurate with the general amounts of work done by the assistant. Likewise, when the assistant goes to the supply room to obtain paper, pens, or other implements needed for the job, she generally does not pay directly for those goods.

On the larger scale, we see firms like General Motors which own not only the factories where automobiles (final products) are assembled, but also own the workplaces that produce the component parts that go into the assembly of that good that is sold to the general public. General Motors does not go through the process of purchasing those parts in the same way that it would purchase items from another independent company, instead using what is called *transfer pricing*, which is an attempt to impose a semi-market order within the firm, but with administered prices.

Milgrom and Roberts (1992) write that firms engage in transfer pricing precisely to re-create, albeit rather imperfect, market conditions within the firm. Yet, as Chiles and Choi point out, the implementation of TQM within an organization is far more encompassing that an attempt to create a shadow price system. Instead, they build on the works of Austrians, including Kirzner (1973), Lachmann (1976, 1986), Hayek (1945), Boettke and Prychitko (1998), and

Mises (1998) to demonstrate how the ideas behind TQM are compatible with the Austrian view of markets operating as a process.

In explaining the market process view that is at the core of Austrian analysis, it first must be explained that it stands in contrast to the Neo-Marshallian view of markets being entities in various states of equilibrium. Writes Kirzner:

> A characteristic feature of the Austrian approach to economic theory is its emphasis on the market at a *process*, rather than as a configuration of prices, qualities, and quantities that are consistent with each other in that they produce a market *equilibrium* situation….It is interesting to note that economists of sharply differing persuasions within the Austrian tradition all display a characteristic disenchantment with the orthodox emphasis on both equilibrium and perfect competition. (Emphasis author's) (1976, 115)

To emphasize their point, Chiles and Choi compare the TQM points to the Austrian market process paradigm to demonstrate their similarities. Table 1 reproduces their comparison.

TABLE 1
Comparison of TQM and Austrian Market Processes

TQM	AUSTRIAN ECONOMICS
Systems Orientation	
Organizations as total Systems	Society, Markets, organizational systems, firms, individuals
Subsystem Co-ordination via Top Management	Plans, imagined futures, design of institutional remedies, co-ordination of dispersed knowledge
Subsystem Co-ordination via Incentive Systems	Ownership of property rights, economic calculation, profit or opportunities for gain provide entrepreneurial incentives, co-ordination of dispersed knowledge
Subsystem Co-ordination via Teams	Nested institution within the firm, rule following, co-ordination of dispersed knowledge
Customer Orientation	
Customer Focus	Customer as final arbiter in the market process, entrepreneurship directed toward satisfying existing and creating entirely new customer wants and needs, customer wants and needs as selection mechanism
Customer Perceptions	Subjectivism, perceptions of customer as a key strategic resource
Learning Orientation	
Continuous Improvement	Continuous innovation, improvement, learning, plan revision, means-end framework revision; market as an evolutionary process of trial-and-error learning
Benchmarking	Entrepreneurial discovery, imitation by less alert entrepreneurs, profit decay

Data-Driven Analysis	Qualitative methods to address tacit, unobservable factors that tend to defy quantification, measurement, and articulation
Change Orientation	
Control	Rule following and other institutions provide stability
Change	Dynamic, disequilibrium process of change; changes occur endogenously through invention, alertness, and imagination; emergence of novelty
Empowered Employees	Entrepreneurs, human action, methodological individualism, subjectivism, dispersed knowledge
Organization Survival	Selection process

Chiles and Choi say that the very set of processes that occurs in the give-and-take of an economic market is similar to the setting under which the TQM process can flourish. Take TQM's "customer focus," for example. Austrians, beginning with Menger (1950), begin their analysis with demand for the "final" or consumer good. (Austrians also refer to consumer goods as "lower-order" goods, and the factors of production, including capital, labor, and raw materials as "higher-order" goods.) In Austrian theory, the value of the higher-order goods depends upon the value that consumers place upon goods of lower order. Given that set of facts, employees must serve their consumers in a satisfactory manner, or the "boss" may well "fire" them by choosing other goods or another seller/producer. This is what Mises (1998, 270) calls "consumer sovereignty."

The TQM paradigm takes this one step further by insisting that employees absorb customer orientation in their workplaces by referring to each other as "customers." The idea behind it is taken from the "customer orientation" portion of Table 1, and it also is reflected in Step 12 of Deming's "Fourteen Points." However, the real issue remains as to whether or not a co-worker really can be regarded as a "customer" in the same manner as one considers a specific buyer of one's product – with the employees acting in accordance with that worker classification – or if the practice is little more than an exercise in semantics that is geared to create an artificial atmosphere in order to emulate a market.

TRANSACTIONS COST ANALYSIS, THE FIRM, AND TQM

The situation we are describing also is connected to the larger debate economists have carried on regarding the firm itself. Economists and others who have long been dissatisfied with the standard "Black Box" theory of the firm (Klein, 1998) that dominates mainstream neoclassical economics and have turned to other analytical devices than the standard paradigm in which "the firm" seemingly automatically absorbs inputs and cranks out the outputs. Beginning with Ronald Coase (1937), a transactions cost approach has taken shape, as Williamson (1975, 1985, 1996), Klein, Crawford and Alchian (1978), and many others have examined the firm not as a monolithic entity, but rather as an organization comprised of people who are not omniscient in their decision-making abilities and face real cost and information constraints as they attempt to gain the information that is necessary to make effective decisions. It is a viewpoint that says one

cannot understand the *inter-firm* connections without better understanding the *intra-firm* relationships.

In the past two decades, the transactions cost literature of the firm has grown. Moreover, economists, beginning with Sowell (1980) have been re-applying Hayek's paper (1945) on knowledge and the price system in a way that fits their own analysis of the dynamics of decisions within the firm. Jensen and Meckling (1992) expand the Hayek theme in examining the differences between specific and general knowledge, and how organizational structures will operate given the constraints of such knowledge. They write:

> Capitalist economic systems solve the rights assignment and control problems by granting *alienability* of decision rights to decision agents. A right is alienable if its owner has the right to sell a right and capture the proceeds offered in the exchange. Indeed, we define ownership to mean possession of a decision right along with the right to alienate that right, and we believe that when people use the word ownership that is what is meant. This combination of a decision right with the right to alienate that right is also what is generally meant by the term property right so frequently used in economics (see, for example, Alchian and Allen 1983, p. 91; Coase 1960). In contrast to markets, organizations generally do not delegate both decision rights and the alienability of those rights to the agent. A machine operator might be delegated the rights to operate and maintain a machine, but not the rights to sell it and pocket the proceeds. In the absence of alienability, organizations must solve both the rights assignment and control problems by alternative systems and procedures. (252)

The problem that attends dissemination of information is stated as follows:

> We define *specific knowledge* as knowledge that is costly to transfer among agents and *general knowledge* as knowledge that is inexpensive to transmit. Because it is costly to transfer, getting specific knowledge used in decision-making requires decentralizing many decision rights in both the economy and in firms. Such delegation, in turn, creates two problems: the rights assignment problem (determining who should exercise a decision right), and the control or agency problem (how to ensure that self-interested decision agents exercise their rights in a way that contributes to the organizational objective). (251-252)

For the most part, the transactions cost approach has given academic researchers a powerful set of tools to examine the behavior of individuals acting within an organizational structure, and that the structure of personal incentives will be an important ingredient in the decision making calculus in which individuals within organizations will engage. Perhaps it is best explained by Heyne (2000, 4), who writes that economic thinking:

> …can best be summarized as a set of concepts designed to bring out the implications of one fundamental presupposition: *All social phenomena emerge from the actions and interactions of individuals who are choosing in response to expected benefits and costs to themselves.* (Emphasis author's)

In applying the paradigm of TCA to TQM, the obvious issue would be how the various players in the organization can diminish the real barriers that frustrate the dissemination of vital information that would be advantageous to a particular firm or working organization. As Jensen and Meckling point out (employing Hayek's view), good decision making will be dependent upon the accuracy and timeliness of the information, which is going to be scattered and decentralized. Thus, the key to decision-making success is finding ways to allow the people who hold the "right" information to have a place in the decision chain, or what TQM advocates would call "worker empowerment."

Ludwig von Mises developed another approach that has some similarities to transactions cost analysis in the first half of the 20th Century, a methodology that examines what he called "economic calculation." Mises was well-known for his publicized running debate with Oskar Lange of Poland over the viability of socialism (Ekelund and Hebert, 1990). (Mises argued that necessary economic calculation was not possible under a pure socialist system, while Lange said that socialist planners simply could match the price system found in a capitalist economy in order to distribute goods.)

For the most part, application of Mises' analysis has been relegated to discussions of the viability of capitalism versus socialism. Rothbard (1993) applied Mises' theorem to the hypothetical question of whether or not all businesses could merge into a single large firm (Rothbard contended that the limitations of economic calculation would make it impossible), but little else has been done with the analysis since then. Heilbroner (1989, 98; 1990, 92) discussed Mises in his *New Yorker* articles on the collapse of the former U.S.S.R., applying Mises' theme of economic calculation, but the application was macro, not micro, dealing with issues of political economy.

We believe, however, that Mises' analysis of economic calculation has a much wider application than has been given in the economics and business literature, and we look to apply it in this paper as a mechanism that gives us further insight into organizational strategy and decision making. First, it employs some of the tenets of transactions cost analysis, including the issue of knowledge/information gained through market prices (as explained by Hayek); second, it completes what TCA begins by offering insights into the decision making processes not just of managers who work with for-profit firms, but also those in the non-profit and government sectors.

MISES, ECONOMIC CALCULATION, AND THE APPLICATION OF TQM

In his "Economic Calculation in the Socialist Commonwealth" (1975), Mises writes that a pure socialist system would not be able to function because it lacked the necessary components of what he called "economic calculation." He writes in *Bureaucracy* (1944):

> The problem to be solved in the conduct of economic affairs is this: There are countless kinds of material factors of production, and within each class they differ from one another both with regard to their physical properties and to the places at

> which they are available…Which of these potential procedures and plans are the most advantageous? (p. 22)

The key to economic calculation, writes Mises, is found both through a profit-and-loss system and market prices (which he says can only exist in the presence of private property). He writes:

> The guide of economic planning is the market price. The market prices alone can answer the question whether the execution of a project P will yield more than it costs, that is, whether it will be more useful than the execution of other conceivable plans which cannot be realized because the factors of production required are used for the performance of Project P. (p. 23)

In Mises' view, profits and losses would provide the guidelines as to the success or failure of individuals within organizations to be able to engage in proper economic calculation. Any attempt to operate without the guiding posts of profits and losses would, in effect, be like trying to pilot a ship without a rudder. However, he always applied his points to the larger issue of socialism versus capitalism. To put it another way, his arguments were made to discourage political leaders in capitalist nations to implement a socialist order.

Thus, Mises was arguing from a *macro* point of view. His analysis of economic calculation, however, never has been applied to managerial decision making on a *micro* scale, yet we believe, as stated earlier, that his examination has much wider application than even he might have envisioned. We maintain that Mises' application of economic calculation not only compliments the more established transactions cost literature, but also helps to fill in some of the gaps that (inevitably) any set of theories is going to possess.

The normal mechanism by which one evaluates management decisions, according to Milgrom and Roberts (1992) is "efficiency," but the obvious question is this: What are the criteria by which one establishes efficiency? The transactions cost approach *does not provide direct answers* to that question. Yes, managers have access to sets of prices, but the conditions under which those prices are generated will determine whether or not they are suitable for economic calculation. As long as prices are generated within the constraints of a market system, which means that they are "free" prices not administered by the state, and that resources are privately owned, they are reliable and the TCA mechanism can readily be applied.

(If one is simply looking at the firm as a "black box," the condition of "efficiency" is reached when the price of whatever the firm is producing is equal to minimum long-run average cost. This condition is based upon the assumption that the firm has "minimized" costs, and is in a state of long-run equilibrium.)

But a modern economy such as the one in the United States has a vast government sector, not to mention a large number of not-for-profit organizations. Managers in both of those sectors make decisions on a regular basis, yet while they are subject to economic constraints, other factors also play a role that are not necessarily economic in scope but do influence choices. (Certainly, one can include political constraints in that mix.)

If one applies a Misesian analysis to the individual decision making process in these various organizations, then one might conclude that the method might well differ according to whether or not the organization is for-profit, a private non-profit, or government entity. That being the case, it would then seem logical to assume that different decision making processes will lead to different managerial outcomes.

As noted in the introduction, we believe that Mises' method of analysis provides an interesting window through which to view the various attempts to implement TQM programs in U.S. business firms, as well as non-profits and government agencies. One of the attitudes that TQM programs tried to change was how people within organizations interacted with each other. As pointed out earlier, employees were urged to think of each other as customers, not just co-workers.

At the same time, the TQM approach also calls for a strong "customer focus" in which workers and managers are expected to engage in teamwork designed to maximize benefits for customers of the firm. As previously noted, the customer-based focus fits neatly within the Austrian paradigm, since valuation of the factors of production is imputed from the value that consumers place upon the lower-order goods.

But the "customer focus" also depends upon the organization having *real customers*. General Motors produces and sells automobiles to individuals and organizations that have the right to purchase cars made by other companies. In other words, GM must satisfy the needs and wants of its customers or they will take their business elsewhere.

Contrast the experience of a firm like GM to the Internal Revenue Service.[1] While IRS agents might very well go through TQM training to improve their skills, the taxpayers with whom they interact are *not* customers, and no amount of instruction can change that fact. When a taxpayer must go through an audit with an IRS agent, one of the two parties is under duress, and it is not the agent, who is working to please his or her employer, and who has the power of law to force the taxpayer to pay certain sums, under penalty of fines and imprisonment. One cannot conjure a "customer focus" paradigm from this set of facts.

In breaking down the individual calculus, we find that both GM and the IRS will face similar as well as dissimilar agency problems. Certainly, there will be shirking from employees in both workplaces, and managers will have systems in place to monitor behavior. Employees in both operations will be tempted to take longer lunch breaks or spend work time doing personal business, but the consequences of agency problems will have decidedly different outcomes for the two entities.

In the case of General Motors, or any other firm that must survive by satisfying customers, large-scale shirking may well mean the end of the firm, or at least a severely diminished role in the marketplace. The profitability of the firm will rise and fall in large part to

[1] One of the authors worked for a summer at the Tennessee Valley Authority, which was trying to implement a TQM program for its employees. During one of the TQM sessions, the workers saw a film on TQM which said that even the IRS was using TQM and that IRS agents were being taught to refer to taxpayers as "customers."

the ability of the employees to engage in certain amounts of teamwork, given the large-scale cooperation that must exist between individuals employed by that firm in order for products to be produced, brought to market, and purchased by customers who generally have the option to shop elsewhere.

Managers at the IRS will be concerned about the ability of its employees to collect taxes, but while there is at least some amount of cooperation between individuals employed by that agency, there is no concern for "profitability" because the IRS does not turn a profit, nor can any set of individuals claim ownership to the agency and its assets. Furthermore, the agency's "customers" are people who do not have the choice of "shopping" for a different tax collector, something that surely will fit into the personal economic calculus of the IRS agent and that agent's managers.

Moreover, the performance "quality" of the GM and IRS employees is likely to be measured in very different ways. Take the assembly-line worker in one of the GM plants, for example. The "quality" of his or her work will depend upon the "quality" of the performance of co-workers, and the final measurement will be an automobile that is relatively free of defects and is purchased willingly by a satisfied customer. Thus, it becomes paramount for the managers and principals of GM to foster a climate in which the necessary teamwork not only is possible, but also a desirable condition for the employees themselves. The "quality" outcomes ultimately become measurable as reflected in the choices of consumers; indeed, quality issues here cannot be determined apart from consumer choice.

The IRS agent, on the other hand, will be evaluated by the amount of new taxes he or she is able to collect from individuals who otherwise would rather not pay the money. Customer "satisfaction" in this case is nonsensical; the "satisfied" IRS "customer" would be someone who either owes no taxes or is owed a "refund" and would hope that the agent underestimates the taxes owed. An unsatisfied IRS "customer" is one whose tax payments are higher than expected, so the better the agent performs in the eyes of managers, the worse off the "customer" becomes. The measurement of employee "quality" comes not from consumers exercising free choice, but from the judgment of managers who has set goals for collection of tax revenues.

If we were to presuppose that managers of both entities will attempt to implement a TQM program, the divergent roles played by the "customers" of both organizations can readily be assumed to play a major role in how the programs will be put into action. For GM and other like firms, the "successful" TQM program would have to be based upon customer awareness, while for the IRS, it would be based upon the interests of the government. Therefore, one cannot speak of a TQM program that would apply in the same way to both organizations.

MISESIAN ANALYSIS AND INTERNAL ECONOMIC CALCULATION WITHIN AN ORGANIZATION

Given the various constraints and institutional arrangements by which organizations are identified, we look now at the internal economic calculation that organizations face, and how such calculation will influence the success or failure of a TQM program. As noted in the previous section, there are some aspects of shirking that will be common to any organization, but

there also are going to be important differences. In this section, we look at the particular economic calculus that will play a part in worker performance as it relates to the implementation of TQM.

If we go back to Wruck and Jensen's analysis that TQM attempts to operate in a non-market mode, and yet simultaneously the program requires that the workplace be seen as a quasi market where co-workers call each other "customers." From a Misesian point of view, this clearly is a recipe for trouble, as one can see the difficulty in attempting to engage in economic behavior without the benefit of those tools that make exchange possible.

Earlier in this paper, we use Wruck and Jensen's point that TQM involves the transferal of certain rights of decision making from centralized to decentralized sources. However, one must keep in mind that (1) these rights are not "owned" in the sense of their being private property, and (2) they cannot be sold. Thus, one cannot use a market mechanism to transfer these rights; instead, the program will be successful only when those who previously have made many decisions (upper and middle-management) agree to transfer some of their authority to individuals who may be "closer to the action" but in the past have not taken part in any meaningful decision making. Furthermore, the "front-line" individuals also must agree to *accept* this new decision-making authority, and there are many reasons why an employee in this position might be reluctant to agree to be in that position.

Given the absence of prices and private property, other factors must be applied for these business transactions to take place. As Wruck and Jensen point out, the originator of TQM, W. Edwards Deming, objected to the use of monetary incentives as a way to grease these changes, preferring, instead, to encourage changes in attitude and systems of incentives that would be internalized by the individuals in that organization, an insistence that Wruck and Jensen believe is mistaken or short-sighted. They argue, instead, that "the increased decentralization associated with TQM should be associated with a strengthening of the relation between performance and rewards of all types," (247) one of those "types" being payment of monetary rewards.

The emphasis upon intrinsic, internal rewards does pose a problem for the individuals involved in the process, that being that the lack of a mechanism of economic calculation places them in a position not unlike the economic planner in a socialist commonwealth who had to make economic decisions, yet had none of the necessary tools of calculation by which to decide. For example, assume that the management of a GM assembly plant wishes to implement TQM and transfer some authority from the managers to the front-line workers. The obvious question that both workers and managers will ask is: "How will this benefit us?" Specifically, what would be the rewards to workers and managers – and what would be some of the consequences they might face for a wrong decision?

Entrepreneurs in the Austrian system reap the rewards for correct decisions, but also bear the costs of a wrong choice. Thus, it is unrealistic to assume that the implementation of a TQM system can effectively reward front-line workers and managers for good choices, but shield them from the bad ones. Furthermore, the imposition of a union contract for the front-line employees that protects them from the immediate consequences of poor choices would create its own set of moral hazard problems. (The long-run consequence of a series of poor choices by management

and workers might be the elimination of the firm altogether. Union contracts can make short-term guarantees for employees, but it cannot assure them that the firm will stay in business if it fails to be profitable.)

The key to making a TQM program work within the Misesian paradigm (in the obvious absence of the ability to buy and sell authority – based upon the present value of future rewards to be attained through changes in decision making) would be the creation of a set of circumstances in which the employees are able to calculate the cost of their actions not only to themselves, but also to the firm itself. Indeed, the heart or the agent-principal problem that Jensen and Meckling describe (1976) is the presence of a set of incentives based upon the calculus by individual employees who perceive short-term benefits from acts that impose costs upon their employer. (This includes the ubiquitous long lunches, the conduct of personal business on company time, or even small-scale employee stealing or unauthorized use of company materials.)

To work around these very real constraints is not an easy task. As Heyne points out,:

> …people…*will not do what is in the interest of all unless it is in the interest of each.* People's actions are guided by the costs they expect to bear and the benefits they expect to receive *as a result of those actions.* (355) (Emphasis author's)

This is not to say that all TQM programs are doomed because of the economic calculation problem. Indeed, as Chiles and Choi point out, some firms have successfully implemented TQM and have seen good results. Yet, the very high failure rate of TQM also tells us that the real barriers to achievement exist. It would seem to us that those organizations which must survive by pleasing customers – who have the freedom and ability to shop elsewhere – would have the best opportunity to enjoy at least some success in making TQM work. That is because managers at least would have a relatively clear picture of what they need to do in order to be a viable entity in a competitive marketplace.

Those organizations which do not have real customers present a different problem for those who would implement TQM in those workplaces. Because the circumstances of those workplaces do not easily lend themselves to economic calculation in neither an intra- *nor* an inter-firm capacity, it would be difficult to establish a TQM program that could be effective for very long.

CONCLUSION

In this paper, we have attempted to employ the methodology of economic calculation as developed by Mises in order to shed some light upon the prospects of success or failure in the implementation of TQM programs. We believe that real problems of economic calculation within the firm contribute to the inability of more firms to install TQM programs that are seen to be workable – and worth the costs of implementation.

This paper also briefly looks at the issue of Transactions Cost Analysis in looking at success and failure of TQM, but does not attempt to employ TCA as the main vehicle of investigation here. That, no doubt, should be the subject of future papers on this topic.

When Mises critiqued socialist theory through the lens of economic calculation, he did so as a means of discrediting socialism as a viable social system. The fall of the Berlin Wall in 1989 and the subsequent collapse of the Soviet Union was testament to the accuracy of Mises' predictions. However, we have attempted to employ economic calculation as a means of examining some of the inner workings of the firm. Mises saw economic calculation as a tool by which to explain how a large economy works; we use it to account for the very real difficulties of bringing TQM to the workplace.

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