Stephen R. Luxmore is Assistant Professor of Management and **Edward J. Stendardi** is Associate Professor of Management both at the Graduate School of Management, St. John Fisher College, 3690 East Avenue, Rochester, NY 14618, USA.

Implications of Total Quality Management for Agency Theory

by Stephen R. Luxmore and Edward J. Stendardi

Total quality management (TQM) has received considerable attention as a way to increase both the effectiveness and the efficiency of corporations (Bounds *et.al.,* 1994; Grant, Shani and Krisnan 1994; Olian and Rynes 1991; Powell 1995; Ross 1993). Concerned primarily with the delivery of customer satisfaction, the proponents of quality and/or TQM (Deming 1986; Juran 1992; and Crosby 1979) have developed principles and procedures for achieving total quality and meeting multiple corporate goals. Empirical evidence regarding outcomes is mixed; success and failure case studies abound, statistical methodologies are questioned, and more rigorous empirical studies present some positive findings (Powell 1995). Some maintain that the reasons for the failure of TQM systems is incompatibility between existing Western management thought which is grounded in economic models, and the TQM paradigm, which evolved from statistical theory, and has its own set of assumptions (Grant, Shani and Krisnan 1994). Despite such mixed empirical results, TQM continues to be promoted and implemented. This is the beginning point for our examination of TQM. The TQ management paradigm is practiced in economically and culturally diverse environments, including those which embrace an economic perspective, complete with maximisation of shareholder wealth, self-interest, rational decision makers, separation of ownership, and agency costs (Grant, Shani and Krishnan 1994).

While principal-agent relationship issues have been long recognised (Radner 1992), it is the modern field of corporate finance which has examined in detail the relationship between a principal (the owner) and their agent (frequently a manager) in a firm (Fama 1980; Jensen and Meckling 1976). Agency issues have also been expanded beyond finance into other functional areas of management such as organisational behaviour and strategy. Essentially, agency theory maintains that a potential principal-agent problem arises when the goals of the two parties diverge, and there exists the opportunity for the agent to engage in actions contrary to the best interests of the principal. Agency costs result when both the principal and the agent incur costs in an attempt to prevent the agent from engaging in actions that are not in the best interests of the principal (Fama 1980; Hill and Jones 1992; Jensen and Meckling 1976; Ross 1973). There exists a vast and rich literature which explores this relationship, but it does not explore the implication of adopting TQM principles on the principal-agent relationship.

It is our belief that many of the principles of TQM which have been used successfully to enhance corporate performance can also be used to help manage the principal-agent relationship and that these principles can be effective tools in reducing agency costs. We agree with Grant, Shani and Krishnan (1994) that TQM "requires a radical and pervasive change within the firm" but believe that the economic based management paradigm is too entrenched in Western firms and therefore TQM must fit or be fit into this structural factor. The purpose of this article is to present arguments which demonstrate the linkage and consistency between TQM and agency issues and which will allow for further development and testing in subsequent articles.

This article will be comprised of three parts. The first part will deal with a review of the basic principles of TQM. The second part is a brief review of agency theory. The third and main part of the article will deal with how TQM principles can be utilised by a firm to reduce agency costs.

I. Total Quality Management

Bounds *et.al.,* (1994) note that TQM is difficult to define for a number of reasons including the evolutionary factor of the concept, the different stages of implementation of TQM practice by firms, and organisational differences resulting in multiple forms of TQM. Despite these issues, many have tried to define TQM, including Bounds *et.al.,* (1994) who cite Rampey and Roberts' (1992) definition of "...a people-focused management system that aims at continual increase in customer satisfaction at continually lower real cost. TQM is a total system approach (not a separate area or programme), and an integral part of high-level strategy. It works horizontally across functions and departments, involving all employees, top to bottom, and extends backwards and forwards to include the supply chain and the customer chain...."

From the works of Deming (1986), Juran (1992) and Crosby (1979), we have summarised the principles of TQM as (1) customer focus, (2) management leadership, (3) teamwork, (4) an analytical approach, and (5) continuous improvement. Other researchers have developed TQM philosophies or factors checklists which are captured in our five principles (see, for example, Olian and Rynes (1991) who present eight philosophies, and Powell (1995) who presents 12 factors).

Customer focus maintains that the primary focus of the firm is the customer whose inputs drive the design of products and services. The quality of products and services is determined solely by the customer. This belief has motivated Ishikawa to define a "total quality company" as one that "designs, develops and produces and services quality products which are the most economical, most useful and always satisfactory to the customer".

Management leadership requires visible effective leadership where top management will demonstrate a visible commitment to manage utilising TQM principles and place quality ahead of other pressing demands and objectives. Deming (1986) asserts that the primary focus of managers should be on helping people to do a better job to meet and exceed customer expectations.

TQM asserts the centrality of teamwork to corporate success. Teamwork is a broad concept that encompasses employee empowerment, vertical deployment of quality initiatives, and emphasis on process and cross-functional co-ordination (Saraph, Benson and Schroeder 1989; Tuttle 1991; in Olian and Rynes 1991). TQM requires members of the firm to work together, combining their skills and ideas to enhance the quality of their work. Employee empowerment maintains that the authority over delivering and improving products and services must be in the hands of the "doers" rather than the overseers. Vertical deployment of quality initiatives stresses the importance of having everyone in the organisation understand how their work affects key organisational objectives. TQM also emphasises process and cross-functional co-ordination. This emphasis on process reduces buck-passing and finger-pointing and encourages employees to think of themselves as internal customers and suppliers (Olian and Rynes 1991). Management in a TQM organisation will reinforce and reward quality improvement contributions. Deming states that it is the role of management to eliminate fear, to encourage open communication and the sharing of information, to break down barriers between departments, and to encourage problem-solving through cross-functional teamwork.

TQM is based upon an analytical approach and the use of statistical methods. Managers will use statistical methods to control and improve processes, and data based analysis will direct management decisions. Deming (1986) encourages firms to utilise modern methods of training using statistics and to use statistical methods for the continual improvement of quality and productivity.

Finally, TQM is based upon the belief in continuous improvement to satisfy customer expectations and lower costs. Managers must actively pursue quality improvement through a continuous cycle that focuses on assessing and also on planning, doing, and verifying improvements of key processes. Deming (1986) states that managers must continually search for problems in the system and seek for ways to improve them.

II. Agency Theory

An agency relationship can be defined as one in which one or more persons (the principal(s)) engages another person (the agent) to perform services on their behalf which involves delegating of some decision making authority to the agent (Jensen and Meckling 1976; Ross 1973). The cornerstone of agency theory is the assumption that the interests of the principal and the agent diverge.

It is interesting to note that economists have long recognised "agency issues" in the principal-agent relationship. Adam Smith (1776, Vol.2) took a dim view of the relationship between the shareholders and senior management when he points out that the "directors of such companies, however, being the managers of other people's money rather than their own, it cannot be well expected that they should watch over it with the same anxious vigilance with which the partners in a private co-partnership frequently watch over their own... Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company" (Radner 1992).

Radner (1992) also points out that one hundred years ago, the typical firm was a small enterprise, managed by the owners and perhaps a few assistants. The economies of today's large industrialised nations are dominated by giant firms with thousands or even hundreds of thousands of employees (i.e., General Motors). In such large firms, as many as a third of these employees will be working as part of the management process. The implications of this shift to large firms with a large layer of management are decentralised management - the division of labour among many people, decentralised information which results in bounded rationality and the decentralisation of incentives. All of these exacerbate the agency issue.

Agency costs can be defined as the monitoring costs incurred by the principal, the bonding costs incurred by the agent, and any residual loss realised as a result of divergent interests (Hill and Jones 1992). The traditional approach to managing the principal-agent relationships is the utilisation of explicit and implicit contracts between agents and principals (Eisenhardt 1989; Hill and Jones 1992).

Eisenhardt (1989) states that contracts can be (1) behaviour-oriented, which includes mechanisms such as salaries, hierarchical governance, such as legal factors and monitoring by the board of directors or; (2) outcomes-oriented, which includes incentives such as commissions and stock options, and market mechanisms such as the labour market and the market for corporate control. Casual empiricism demonstrates how the principal-agent relationship can result in outcomes that are less than optimal for the owner of the firm (the principal). Our principal question concerns the relationship between the owners and the managers, and how their interests can be better aligned through the utilisation of the principles of TQM.

III. Implications of TQM for Agency Theory

By definition, TQM should result in the continuous improvement of the quality of goods and services provided, leading to customer satisfaction. TQM has been demonstrated to produce positive results for the firm (Powell 1995). We propose that a portion of the gains realised by firms which implement a TQM system is a reduction of agency costs; monitoring costs should be reduced; agents will be less likely required to have to engage in bonding; or bonding costs will be reduced (lower risk); and the residual loss should decrease. We have three related propositions:

Proposition 1: Monitoring costs are negatively related to the implementation of TQM principles.

Proposition 2: Bonding costs are negatively related to the implementation of TQM principles.

Proposition 3: Residual loss is negatively related to the implementation of TQM principles.

IV. Underlying Assumptions of Agency Theory

We will demonstrate the linkage between TQM and agency theory by relating the implementation of TQM to the underlying assumptions of agency theory.

Eisenhardt (1989) presents an excellent summary of the underlying assumptions of agency theory. While the assumption of divergent interests of the principals and the agents is necessary for the agency problem to exist, several other assumptions, namely information asymmetry, bounded rationality, varying degrees of risk aversion, outcome uncertainty, moral hazard and adverse selection are also important in illustrating why residual loss will not be eliminated by any or all of the traditional mechanisms available to the principal and/or agent.

A. Divergent Interests

We begin with self-interest. Eisenhardt (1989) reviews the contributions of Jensen and Meckling (1976), Fama (1980), and Fama and Jensen (1983) to divergent interests between the agent and the principal. Two control mechanisms are discussed: outcome-based contracts and information systems. The purpose of outcome-based contracts is to align the actions of the agent (because the agent's remuneration is dependent upon their actions) with the interests of the principal. The information system is intended to reduce the ability of the agent to behave opportunistically. Because the principal has information about the actions of the agent, the agent will be less likely to try to deceive the principal. We propose that TQM systems can substitute for and/or enhance the effectiveness of these two traditional mechanisms.

The first principal of TQM, customer focus, has implications for monitoring costs and residual loss. An implicit assumption of customer focus is the creation of competitive advantage: the customer will regard a firm's product as superior, and profitability per customer will increase (higher margins, lower customer defect rate, increased market share). This long-term goal is clearly consistent with aligning the interests of the agents with those of the principals' (Grant, Shani and Krishnan 1994). Furthermore, the emphasis on the customer applies to all employees, not just those defined as agents. An expected outcome is improved understanding by each individual of their role in delivering the good or service to the customer (Grant, Shani and Krishnan 1994). The emphasis on creating and enhancing value added by managers and employees will eventuate efficiency gains. The principals should find a reduced need to monitor the agents of the TQM firm, given the expectation of improved operating performance. The improved performance (Powell 1995) is evidence of reduced residual loss.

B. Information Asymmetry

The agency theory literature recognises that information asymmetry between the principal and agent will continue to exist despite the best monitoring efforts. Examples of this abound in industry. CEOs are accused of falsifying records; members of the boards of directors are scrutinised for multiple and conflicting board memberships; CEOs and other top managers are replaced only after several years of poor performance; large institutional shareholders demand representation on the board of directors.

The flow of information within the organisation is improved under TQM. The principals of leadership, teamwork, and an analytical approach require effective information systems. Within a TQM setting, leaders increase their visibility to employees through communication (downward, upward, and laterally) and regular interaction with employees (Olian and Rynes 1991). As a result, their ability to engage in behaviours which are not consistent with the interests of the principals is reduced. This is because employees become aware as to how decisions are formulated and implemented and, moreover, employees begin to understand or improve their understanding of the decisions which are made. This improved knowledge of the business allows employees to create linkages between properly implemented decisions and the expected impact on the competitive stance of the firm. As a result, the employees take on a new role of monitor. We are not proposing that employees act as monitors on behalf of the principal, but rather the employees increase their concern for the welfare of the firm and decisions enacted by agents because of increased commitment and responsibility to the firm brought about by customer focus, teamwork, and continuous improvement. As such, the principal will be able to decrease his/her monitoring effort.

Teamwork has a similar effect. Mid- and low-level managers are at times replaced by teams or are given a new role as facilitators (Grant, Shani and Krishnan 1994; Olin and Rynes 1991). Either of these outcomes serves to reduce the discretionary power of these agent. Additionally, information becomes necessary for employees if they are to assess outcomes and make decisions (Grant, Shani and Krishnan 1994). While asymmetric information between the principals and the agents may not be eliminated under this scenario, the negative implications of asymmetric information are minimised as the agent, in the new role of facilitator, loses some decision-making power. This serves to reduce the agents' ability to engage in opportunistic behaviours. Additionally, employees become responsible for their own actions and efforts which, as proposed earlier, serve to increase their commitment to the organisation. Both of these factors should reduce the need for monitoring by the principal, and reduce the need for the agent to utilise the bonding mechanism and/or reduce the risk (lower the bonding cost).

By definition, an analytical approach requires the creation and sharing of information (Olian and Rynes 1991). While it is likely that the firm will keep such information internal for competitive reasons (i.e., this does not reduce information asymmetry between the principals and agents *per se*), the improved flow of information within the firm enhances the employees' knowledge of the firm and, as outlined above, their new role monitoring decisions of the agents.

C. Bounded Rationality

Bounded rationality deals not only with imperfect information, but also the interpretation of that information (Williamson 1975). While mechanisms exist to increase the amount of information available (annual reports, boards of directors, etc.), all such information is subject to interpretation. Interpretation will be influenced by one's degree of risk aversion, and relationship to the entity (owner, manager, employee, etc.) leading to differing conclusions and reactions.

Bounded rationality cannot be eliminated. The impact of bounded rationality to the agency problem can, however, be altered. Building upon the previous discussions, we believe that the alignment of interests between the principals, agents, and employees will improve under TQM. Extending this fact to bounded rationality leads us to believe that the interpretation of information by principals, agents, and employees will lead to similar conclusions and agreement upon actions to be implemented. That is, all of these parties should recognise environmental threats and opportunities as such, and generally agree to the expected impact on the firm and, therefore, proactive and/or reactive strategic decisions. For example, when agents and principals have divergent interests, one party may see an opportunity as insignificant (would not take advantage of the opportunity), while the other views the same opportunity as significant (would act to take advantage of the opportunity). As interests become more closely aligned, this type of situation as described should be less likely. Assuming that strategic actions are optimal (there still exists the possibility that all parties will agree upon poor decisions), bounded rationality has a lower impact on agency costs as less monitoring will be required and residual loss will be reduced.

D. Risk Aversion

A primary focus of the principal-agent literature is determining the optimal type of contract (behaviour based contracts vs. outcome based contracts) between the principal and the agent. Originally, agency theory assumed that the agent would be more risk averse than the principal because the agent is unable to diversify their employment while the principal is capable of diversifying their investments. As a result of their risk aversion nature, agents are assumed to prefer behaviour based contracts. Eisenhardt (1989) reviews the literature which extends this risk aversion assumption. She maintains that if one assumes that the principal does not possess perfect information about the actions of the agent, one way to control the actions of the agent is to utilise outcome based contracts. These contracts motivate behaviour by the coalignment of the agent's preferences with those of the principal. The negative consequences of these outcome based contracts are that they transfer risk back on the agent because outcomes can be impacted by forces outside of the agent's control (i.e., government policies, the economic climate, technological change and others). Also, these contracts are costly, and they can only partially reduce residual loss.

We propose that TQM contains elements of both behaviour-based and outcome-based contracts, but avoids some of the negative effects such contracting can create within the organisation. Deming argues against individual compensation rewards and for team recognition (compensation) and individual recognition (praise). His reasoning is found in the principle of teamwork which is thought to improve the quality and efficiency of the employee. This reduces internal conflicts between (1) individuals' pursuits and the goals of the firm and (2) individuals (less competition between individuals) (Deming 1986). This fosters a spirit of co-operation and the pursuit of actions which benefit the team and ultimately the firm. Again, this serves to align the interests of agents and employees and, given the reduction in divergent interests between agents and principals as outlined, clearly reduces the principal's need to monitor. Thus, the degree of risk aversion is not as important an issue under TQM. Under TQM systems, outcomes, as they affect compensation, are tied to the group (risk sharing); the group influences outcomes and shares in the positive aspects (group incentives) and negative aspects (reduced rewards). TQM also imposes behaviour control on the individual. The teams tend to be self-monitoring and governing (Olian and Rynes 1991), resulting in greater responsibility and commitment to the organisation on the part of employees and agents. As a result, the agent is more likely to make investment decisions which are consistent with the investment preferences of the principal's, regardless of the differences in the degree of risk aversion.

E. Outcome Uncertainty

The realised outcome is a function of internal efforts (agent's actions) and external influences outside the control of the agent, such as changes in competitors' strategies, government policies, and so forth (Eisenhardt 1989). Eisenhardt (1989) notes that outcome uncertainty creates problems for preplanning (agent's actions) and risk-sharing (which party bears the risk created by uncertainty). The implication is that the principle-agent conflict is more difficult to solve as outcome uncertainty increases.

TQM imparts two positive influences on this factor. Firstly, the agent is less likely to shirk on their efforts (reduced ability to do so and increased commitment to the firm as discussed above), and their decisions will be more closely aligned with those the principal would make. Secondly, if the firm is delivering continuous improvement and customer satisfaction, the external environment will impact the firm to a lesser degree than non-TQM firms. The TQM firm is concerned wth dynamic optimisation (Grant, Shani and Krishnan 1994), implying long competitiveness and the ability to quickly react to unexpected new opportunities and threats.

F. Moral Hazard and Adverse Selection

Eisenhardt (1989) defines moral hazard as shirking by the agent and adverse selection as the agent misrepresenting their skill set. Both factors impart a negative effect on the principal-agent relationship. We addressed moral hazard above noting that teamwork discourages shirking by all employees, including agents, because of increased commitment, responsibility, and information sharing. The other TQM principles which act to reduce the moral hazard problem also, as a result of improved information flow, are leadership and the analytical approach.

There exists evidence that TQM may reduce adverse selection. Olian and Rynes (1991) note that TQM organisations are noted for recruitment efforts that stress excellence including "realistic job previews and extensive orientation sessions". Even if such mechanisms fail to eliminate poor candidates, we believe the negative expectations of adverse selection is minimised in a TQM environment as a result of teamwork, employee decision-making, and the reduced discretionary power of the agent. A counter argument is when the agent is expected to fulfil a leadership role. In this case, adverse selection could have a serious impact on this underlying principle of TQM, reducing its effectiveness.

VI. Conclusion

The literature on TQM does present arguments which outline the positive outcomes of TQM (Bounds *et.al.,* 1994; Olian and Rynes 1991; Powell 1995; Ross 1993). The literature is also being extended to empirical measurement of TQM systems (Howell 1995). In our article, we demonstrated that the TQM literature is still incomplete insofar as it fails to consider how TQM can align the interests of the agent with those of the principal and/or reduce the ability of the agent to engage in opportunistic behaviour. By integrating agency theory with the TQM paradigm, we illustrated the impact of TQM to extend beyond buyers, suppliers and the firm to also have a potentially positive effect on agency costs through the reduction of monitoring costs, bonding costs and residual costs. Prior to our work, the positive performance associated with TQM firms was viewed as merely a "TQM issue". We have demonstrated that these positive effects could be due to the alignment of the agent's interests with the principal and also with the agent's inability to engage in non-optimising behaviours and, therefore, residual losses decrease. Additionally, other gains to the principal - mainly through reduced monitoring costs - were not clearly delineated. While the TQM paradigms may require radical change in the organisation, it is consistent with economic based models of the firm, and serves to reduce the agency problem.

References

Abrahamson, Eric and Choelsoon Park. "Concealment of Negative Organizational Outcomes: An Agency Theory Perspective". *Academy of Management Journal,* 1994, Vol.37, No. 5, pp.1302-1334.

Alchian, Armen A. and Susan Woodward. "The Firm is Dead; Long Live the Firm". *Journal of Economic Literature,* 1988, Vol. 26, (March), pp.65-79.

Aupperle, Kenneth E., Archie B. Carroll and John D. Hatfield. "An Empirical Examination of the Relationship Between Corporate Social Responsibility and Profitability". *Academy of Management Journal,* 1985, Vol. 28, No. 2, pp.446-463.

Barton, Sidney L., Ned C. Hill and Srinivasan Sundaram. "An Empirical Test of Stakeholder Theory Predictions of Capital Structure". *Financial Management,* Spring 1989, pp.36-44.

Bounds, Greg, Lyle Yorks, Mel Adams and Gipsie Ranney. *Beyond Total Quality Management: Toward the Emerging Paradigm.* New York: McGraw Hill, Inc., 1994.

Cochran, Philip L. and Robert A. Wood. "Corporate Social Responsibility and Financial Performance". *Academy of Management Journal,* 1984, Vol. 27, No. 1 (March), pp.42-56.

Cornell, Bradford and Alan C. Shapiro. "Corporate Stakeholders and Corporate Finance". *Financial Management,* Spring 1987, pp.5-14.

Crosby, Philip B. *Quality is Free.* New York: Mentor, 1979.

Deming, W.E. *Out of the Crisis.* Cambridge, MA: MIT, 1986.

Demsetz, H. "Information and Efficiency: Another Viewpoint". *Journal of Law and Economics,* Vol. 12, 1969, pp.1-22.

Donaldson, Thomas and Lee E. Preston. "The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications". *Academy of Management Review,* 1995, Vol. 20, No. 1, pp.65-91.

Eisenhardt, Kathleen M. "Agency Theory: An Assessment and Review". *Academy of Management Review,* 1989, Vol. 14, No. 1, pp.57-74.

Fama, Eugene F. "Agency Problems and the Theory of the Firm". *Journal of Political Economy,* 1980, Vol. 88, No. 2, pp.288-307.

Fama, Eugene F. and Michael C. Jensen. "Separation of Ownership and Control". *Journal of Law and Economics,* 1983, Vol. 26, pp.301-325.

Gale, Bradley, T. *Managing Customer Value.* New York: The Free Press, 1994.

Grant, Robert M., Rami Shani and R. Krishnan. "TQM's Challenge to Management Theory and Practice". *Sloan Management Review,* Winter 1994, pp.25-35.

Hackman, J. Richard and Ruth Wageman. "Total Quality Management: Empirical, Conceptual and Practical Issues". *Administrative Science Quarterly,* 40 (1995), pp.309-342.

Hill, Charles W.L. and Thomas M. Jones. "Stakeholder-Agency Theory" *Journal of Management Studies,* Vol.29, No.2, March 1992, pp.131-154.

Jensen, Michael C. and William H. Meckling. "Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure". *Journal of Financial Economics,* 1976, pp.305-360.

Jones, Gareth R. and John E. Butler. "Managing Internal Corporate Entrepreneurship: An Agency Theory Perspective". *Journal of Management,* 1992, Vol. 18, No. 4, pp.773-749.

Juran, J.M. *Juran on Quality by Design.* New York: The Free Press, 1992.

Olian, Judy D. and Sara L. Rynes. "Making Total Quality Work: Aligning Organizational Processes, Performance Measures, and Stakeholders". *Human Resource Management,* 1991, Vol. 30, No. 3, pp.303-333.

O'Toole, James. "Do Good, Do Well". *California Management Review,* Spring 1991, pp.9-24.

Powell, Thomas C. "Total Quality Management as Competitive Advantage: A Review and Empirical Study". *Strategic Management Journal,* Vol. 17, 1995, pp.15-37.

Preston, Lee E. and Harry J. Sapienza. "Stakeholder Management and Corporate Performance". *Journal of Behavioral Economics,* 1990, Vol. 19, No. 4, pp.361-375.

Preston, Lee E., Harry J. Sapienza and Robert D. Miller. "Stakeholders, Shareholders, Managers: Who Gains What From Corporate Performance" in *Socio-economics: Toward a New Synthesis,* Amitai Etzioni and Paul R. Lawrence (eds.), M.E.Sharpe, Inc., 1991, pp.149-165.

Radner, Roy. "Hierarchy: The Economics of Managing". *Journal of Economic Literature,* 1992, Vol. 30 (Sept), pp.1382-1415.

Ross, Stephen A. "The Economic Theory of Agency: The Principal's Problem". *American Economic Review,* 1973, Vol. 63, pp.134-139.

Seth, Anju and Howard Thomas. "Theories of the Firm: Implications for Strategy Research". *Journal of Management Studies,* Vol. 31, No. 2, March 1994, pp.165-191.

Williamson, Oliver E. *Markets and Hierarchies.* New York: The Free Press, 1975.