TOTAL QUALITY MANAGEMENT (TQM) IN THE COMPETITIVE (CONFRONTATIONAL) ACQUISITION ENVIRONMENT

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ABSTRACT

While the Total Quality Management (TQM) movement in the United States has led to significant advances in the internal processes and products of hundreds of major corporations and Government agencies, very little evident change has been realized from the application of TQM to the products and processes which transcend organizational interaction, and especially those processes and products which exist at the most painful, potentially most wasteful and often the most confrontationally negative interface anywhere - the interactions of Government and industry within the Acquisition and Logistic Support Processes.

Given, (1) the severe budgetary and projected manpower cuts facing the military today, (2) the rapidly declining interest of corporate leaders in pursuing a business arena that has resisted sufficient profit margins without the presence of major program, big ticket hardware items, and (3) the continuing evidence of increases in the worldwide threat capability (requiring continuing investment in new technologies and combat capabilities) despite a lessening of geopolitical military pressures, TQM is the only current, proven and available intermediary with the capability of turning each of these constraints into a positive environment for all of the training industry's players. It is time for senior management leaders in both the Government and industry to turn their collective attentions from the relatively immediate, internal benefits of TQM and look to applying these proven principles to the very survival of all agencies required to exist and profit within the Acquisition and Logistics processes.

INTRODUCTION

Disbarment. Suspension. Formal legal action. Cessation of progress payments. Negative past performance assessments. Failure of the product to perform to customer need. Negative publicity or professional recognition. Congressional review or censure. Cost and schedule overrun. Dismissals, firings and changes in assignment. This is the stuff or the threats of stuff that the real contractual world is too often seen as being made of and the basis in fact or in foundation for confrontation relationships in dealings between the Government and its contractors. It is a relationship built on unfulfilled expectation and perception, contractual failure and sometimes even an innate belief that there is only one unilateral solution to a problem. Get a position of strength or control before the other guy. Punish the other guy for not living up to his perceived part of the bargain regardless of impact. Bully ones way through a difficult problem without losing face, confidence or leadership. Make sure that your leadership knows that you're getting the job done.

But at what price?

Early in his acquisition career, the author was a member of the KC-10 Joint Program Office Team that conducted the acquisition and contracting of the KC-10 Aircrew Training System. After contract

award to American Airlines, the author became aware of one of the giant paradoxes of Government contracting. While the KC-10 Government contract contained some 3-400 pages, the contract between American Airlines and Link Co. for the simulator was less than two pages in length. While the Government effort took over two years to assemble and manyears to assemble, it took only parts of two weeks time to negotiate the simulator subcontract. And that simulator portion of the program represented about 60% of the total effort.

Later this year, the Government will award another contract for the latest Aircrew Training System (ATS) - the SOF or Special Operations Forces Aircrew Training System. While this program will undoubtedly be the most complex, technically advanced, demanding and potentially most successful of any of the six Air Force ATS'to date, there are some interesting sidelights which must be examined in light of the evolving U.S. military budget and worldwide political environment.

(1) The program will consume hundreds of man years of time and effort prior to contract award; manpower just to create the 4 or 500 page RFP and contract and to conduct the three separate paper design and bid efforts over three years. Man years which no other corporation or Government could afford to or would ever consider expending for similar products, services or profit.

(2) The program will cost the three major prime bidders and their major subcontractors a combined total of somewhere between 30 and 45 million dollars above the Government design funding. Money which on paper would appear hard to ever recover.

(3) For the two losers (any two of the three), economic viability, jobs and careers, future competition with the Government and even possibly their continued existence may be in real jeopardy. All for wanting to do the very best job possible.

(4) Given even the most advanced acquisition strategy and state of evolving technology, the final product/program will not represent the optimal interests of the customer or the Government. Why? Because whichever total solution is selected, superior elements of the losing programs will be lost and by the time the program is fielded, the second and third world political and threat environment will have further evolved, technology will have advanced and, because of the driven acquisition strategy and Government/contractor relationship, any resultant program change will have to be accomplished through the even more painful, costly and time consuming ECP or Engineering Change Process.

(5) Remove the cost of confrontation or protection from the effects of confrontation and the same program could be purchased for 30 - 40%(?) less and all of the above factors could be avoided.

Concurrently with these events, the world has seen the most significant changes imaginable and even their most elemental consequences leads to the inescapable conclusion that while the military capabilities of all forces in the world will change and evolve at an even more demanding pace, no one can afford to continue to do business as Government and industry in America have been doing business over the last fifty years.

THE CONFRONTATIONAL ENVIRONMENT

For the purposes of this paper, the confrontational environment is that contractual condition where the parties committed to the relationship function from a defensive frame of reference; that is decisions, actions and policies are formulated and carried out in a manner which protects the interests of a single party or team before it protects the interest of the terms and conditions of the contract, all of the contractual players and ultimately the customer. While a confrontational condition can evidence itself in many forms, most confrontational situations find their roots in expectation and perception. For example:

- industry marketers who 'provide' technical information to a customer to encourage program development that presents a picture of total problem solution at a cost without basis in Government reality or a performance standard based solely on industry experience. Marketing is a happy solution for all needs.

- the retention of source selection standards from the RFP.
Make the bidder demonstrate his fitness by guessing at Government intention.

- multi-level program management with senior closed door sessions to 'iron out' program difficulties or to establish or strengthen a competitive edge. Reinforce throughout the team that all of the work and hard effort don't really count in the final analysis.

- proposals prepared by 'tiger teams' experts who will never be associated with the program again or proposals which will be converted to actual real time and place plans and projections only after contract award.

- teaming only to win or to get a chance to bid.

- the acceptance by industry of mis-scoped or mis-directed RFP elements so that ECPs or a competitive edge can be gained.

- the buying in of a contract with the 'sure' knowledge that program change in a sole source environment will achieve fiscal health.

- the addition of contractually unenforcable boiler plate every time a program problem or failure occurs to insure that public confidence is maintained.

- the need to give the Government what it wants and expects at all costs.

- the need to give industry all the help it can or will take.

- a fundamental belief that everyone - given a chance - will cheat the Government.

- a fundamental belief that industry will give away program quality for profit.

While these perceptions and expectations are the stuff of confrontation, the negotiating process is its breeding ground and it is important that this delineation be drawn as a key element in applying TQM. Negotiation and consensus building are vital parts of any healthy contractual relationship. They provide for communication, change and true team unity. It is the invasion of expectation and perception (interestingly both positive and negative) that turns this vital, valued added process into the wasteful, trust destroying and hurtful environment of the confrontational relationship. It is this environment where TQM must be effectively applied.

There is an even more compelling reason for immediately promoting TQM in this arena, especially among organizations already steeped in the values and lore of TQM. While most of the real success stories of TQM have centered on internal successes in the workplace, all organizations involved in contractual relationships (and especially those between Government and industry) are driven by external drivers. These drivers can include customer needs, Federal law, Congressional influence, EPA directives, technology growth, threat or many other such factors. As these factors change so must the associated internal TQM processes throughout the environment of any effected organization. Since the most significant driver within the Acquisition and Logistics processes is the confrontationally effected relationship between the customer and industry, <u>any change in that relationship brought about by TQM will impact the value of the internal resources currently being spent on TQM driven change.</u>

TOTAL QUALITY MANAGEMENT

While the basic principles of TQM are relatively well known and understood, there is a fundamental guideline which effects each and every principle regardless of workplace or environment - the concept of value or value added. In the acquisition environment it is a critical one because it is the only means available to bridge the problem of quality versus cost.

In a source selection involving several bidders, for example, each bidder has a proposed solution and a cost. However, when the team has evaluated each proposal and found that each meets the standard, they are faced with the question of selecting the bidder who will best meet the needs of the Government. They are faced with the issue of comparing cost to quality and more often than not, there is no objective means to accomplish this task. For acquisition program managers on both sides of the bidding this dilemma has been a difficult one as every decision has focused on meeting the Governments customer need for the best price.

The operative solution is value, defined as:

V (value) = Q (quality) / P (unit price)

Anything that is value added increases the value quotient while anything (including everything confrontational) which decreases the value quotient is non-value added. The primary function of TQM is to insure that every action in the acquisition process is totally value added to that process. Anything else is judged as wasteful, non value added and in need of immediate change.

This formula has some very interesting and challenging implications. Quality added for little of no cost is a worthy objective only provided that we can objectively define all of the elements required for quality and measure the effects or impacts of change. Actions or activities which add to the cost (time, schedule, performance) lower the value quotient. Excess quality (measured as wasteful activity versus the standard) is controlled by cost. Decision making based on this algorithm must be immediately and totally reduced to objective terms <u>agreed upon</u> by Government and industry before RFP release. These objective terms must encompass the life cycle of the product and provide for the basic TQM imperative - change - on an objective basis.

With this value concept in hand, we will now review each of the basic fundamentals of TQM with an eye to the confrontational environment as it exists within our workplace or professional environment.

1) Customer/Supplier Partnerships. The key word here is partnership. Partnerships, although in many ways risky, are totally dependent upon the complete, non-punitive commitment of the partners because they can only succeed together and if one fails they all must fail. No single partner can stand back and point fingers because ultimately he points at himself. If the partnership fails, he can't stand back

and say, "it wasn't my fault". The ultimate confrontational situation is when both Government and industry report to their constituents (stockholders and Congress) it was the other guy's fault. Somehow contractual relationships must spell out commitment by all involved parties that is more than performance, schedule and cost. It must be more important to succeed than to not look bad. It is interesting to note that successful programs all have strong team partnerships even within the existing bureaucratic environment. The issue then is the wasteful actions they must take to fill a required square.

2) Conformance to Requirements. This TQM element is the most demanding of a Research and Development effort because the definitions, standards and technical language is too easily misinterpreted between agencies, parties and even individuals. Outcomes and prototypes are normally too fuzzy to define by traditional Mil-Stds. In addition, the Government seldom puts requirements into an order of priority which can, among other non value added allow the development of a relatively small issue into a major confrontational situation all out of proportion to its value. Conformance to requirements suggests that:

A). All requirements (Government and industry) are known, accountable by objective means, and acceptable by both parties.

B). Risk is fully defined and understood. Is a negative outcome acceptable? Is the risk assessment an accurate measure for both parties?

C). All requirements are known and understood by all team members including the customer and the Senior Staff.

D). Does conformance to requirements include Government/ industry team norms?

3) Prevention. One of the unique concepts of TQM is the precept that inspection or closing the barn door after the horse is gone is a wasteful activity and that prevention of errors (or confrontation) is more cost effective. Prevention suggests that all contractual parties are steeped and committed to the program and can plan honestly and openly with prevention as a primary outcome. More importantly it suggests that all contractual parties are mandated to identify problems, errors or potential hazards immediately upon identification and to use team strategies to solve them before they happen and become recriminatory. If an error occurs anyway, the team must have the trust and integrity to solve it fully and without recrimination.

4) Do It Right The First Time. This is a difficult axiom to apply in an R&D environment where a bid is often not accurately reflective of the actual organization or capability that will ultimately do the work. Interestingly this concept does not see failure as necessarily not doing it right but does see redundant effort as waste. Thus, a study with negative outcomes can be value added while a follow on study is non value added. Planning is the foundation of doing it right and it is suggested here that because of the budgetary process that currently exists, a great deal more time exists for real team planning than the current acquisition system would seem to allow at first glance. So much of the early review and coordination processes and so many of the players whose expertise is needed could be more effectively employed in planning to do it right rather than checking to see that it isn't wrong at a later date.

5) Communication. Interestingly, communication is the antithesis of confrontation and that the more confrontational, the lower the amount of real communication. This principle is also characterized by the high level closed door session and the perceptions that always seem to follow. Communication is simply insuring that each member of the team has the information he or she needs to do his job right and maintain a strong commitment to the program effort. Rumor, innuendo and mis-communication are a part of this mix. The fundamental contractual relationship must contain provisions for open and full communication for any partnership to function via TQM principles. Lack of effective communication can also lead to confrontation as is found in transactional analysis studies where program problems (involving everyone) are stated in terms of personal failure or weakness. Communication in the TQ environment isn't just writing or talking information but a careful, sensitive process in insuring that the message is received and accurately understood. Confrontation cannot exist there.

6) Measurement. Confrontation can, in one of its most objective forms, be characterized by the act of parties within the relationship disagreeing on measurement and/or the relative importance of measured items. It can be a lack of respect of the specific importance of metrics and it is often a misunderstanding of the definition of a metric. Are the metrics used for contract award the same as contract administration? Do changing members of the partnership hold to and understand common, approved metrics? Are metrics properly defined as forcing, objective, nice to have or target of opportunity? Are metrics available and consistent for all partnership members Government and industry? At the heart of TQM, the objective metric must be used as the foundation for all program activity and review. This suggests that care must be taken to identify all value added metrics, to insure that all metrics are accurate and meaningful and that they are used in the proper context. Bad metrics are as meaningful as good ones and the effective TQ based acquistion team uses both to a value added outcome.

7) Involvement. In the real world of matrix management, teaming and decentralized workplaces, involvement and, coequally, program commitment are hard to achieve. But real involvement is the glue of the customer/supplier partnership and along with communication is the true antithesis of the confrontational environment. Involvement suggests empathy to the constraints and needs of all partners and an ability to adjust to evolving circumstances with a 'do it right the first time' attitude. It also suggests a stake in the partnership by all involved parties. This would suggest that members of the team are kept consistently assigned to the program and are the same people used to maintain the terms and conditions of the contract as were used to win the contract in the first place. It further suggests that the team and the products are the focus of reward and recognition - the team being a Government/industry entity with its own identification, goals, logos, and team activity. Both Government and industry leadership must be sensitive to this team identity and provide appropriate team rewards for everyone.

8. Continual Improvement. This is the one element of TQM which contractual terms and conditions make very difficult to achieve. Once a contract is won and signed, technology, objectives, business approach and standards are essentially frozen and all parties are on a strict scoped schedule of activity through the period of performance. As training and training technology becomes more complex and demanding in the higher order areas associated with combat, teaming and higher order cognitive activity, contractual terms and conditions will have to evolve as well. This need runs right into the Engineering Change Process (ECP) portion of acquisition activity. The commonly accepted perception (source of confrontation) of the ECP process is that it is so complex and resource consuming in a sole source environment that it is too easy to recoup bidding war losses through inevitable program change or repair. TQM suggests that life cycle change planning prior to contract award could negate these costs and perceptions while spurring cost and mission effective change. This life cycle perspective is easily lost in the hustle of a high stress acquisition program but is probably the greatest source of savings in time, manpower and dollars over the programs life cycle. It cannot be overlooked, no matter what the impending imperative.

THE TQM VISION

The removal of a confrontational acquisition or logistics environment and its attendant negative cost clearly depends on each program manager and team member (Government and industry) maintaining a constant focus on value added activity within each program element. In addition, TQM principles suggest that there are several areas where fundamental changes in existing policy and procedure could provide for immediate growth and savings.

A. Requirement Definition. The author sees this 'process' as a convoluted process that is the genesis of many of the confrontational problems which arise in later program stages even within the Government itself. Needs for new processes, products, capabilities and services exist throughout the Government and a healthy competition exists to surface the most important for support within the various service's acquisition programs. Industry must be totally separated from this competitive process because problem identification must be separated from problem solution as the fundamental basis for full and open competition. Even the perception of a violation of this need is the foundation for later confrontational waste.

Instead the Government should use it's R&D base to conduct cost trades and identify to its users the advances in technology, services and capabilities that exist and are on the horizon, and to identify to industry the evolving needs peculiar to the Government. Presentation of a capability does not have to entail proprietary disclosure while classified data flow can be handled in a closed environment while still insuring a competitive fairness.

Once a need has been identified and funded it is time to form a Government/industry requirement definition team to refine it into an RFP suitable for competition. Such a team would be formed as an acquisition, customer and an industry panel developed from a sources sought solicitation that invites only interested, qualified contractors to participate and ultimately bid. This team would fund per diem for all of the industry's most highly qualified players and work to develop a requirement definition that would provide the best value to the customer. All definitions, metrics, standards and activity would be defined to a total team consensus with the goal of developing an RFP which in effect freezes the Q portion of our value formula and allows each contractor to bid only the P. The Government would have the opportunity to see all potential bidders and teams in action before contract award (past performance?), would be able to add the best elements of each program requirement to one document (no redundant effort), and would be sure that each bid reflected a baseline requirement, standard and Government expectation. Each bidder would be fully aware of the competition, the non-confrontational environment for program accomplishment and have a deep understanding of the customer requirement. If the program office has a support capability, it is conceivable that independent front-end analysis could be accomplished in support of this process. Most importantly, contractual clause insuring low risk, warranties and

guarantees, incentives, and terms and conditions would be defined and agreed upon in a consensus environment prior to RFP release.

B. Contract Administration. One of the main advantages of a unified requirement process such as described in A above, is that the transition from bidder to contractor is essentially non-existent. Effective contract administration is almost invisible like a good referee and under the concept of prevention, contractual action for the sake of contractual action is held to a minimum. This is already true for the most part in the 'good' programs but these successes are seen as the result of a good program manager and almost anomalies in contracting rather than the norm and a baseline standard for bidding a Government contract. How much of existing contractual administrative activity is really value added?

C. Testing. It is the authors experience that testing is the first item deleted when scheduling or budgetary constraints arise although it is objectively the best tool available for the entire TQ Team. Testing (initial, interim, final, acceptance) is (if properly designed and conducted) brutally honest, objective and non-confrontational. For a solid team it is a team metric on not only the program but the team itself. TQM suggests that only through objective metrics can effective decisions be made. Testing is the only way to generate such metrics.

D. TQM Training. Even if all members of a requirement definition or contract administration team have had some TQM training, team building requires that TQM training be accomplished for all team members in a common forum which specifies terms, norms, roles and responsibilities and a unifying team vision.

E. Research and Development. R&D programs throughout the Government have seen declining fortunes for a number of reasons including funding shortfalls, unacceptable risk and an inability to demonstrate value added to customer and the Government alike in the competitive acquisition environment. Few would argue the importance of reversing this trend and TQM offers a unique opportunity. Many Government contractors conduct Industry R&D programs using their own resources. If the Government could develop an integrated R&D plan describing in unitized, building block format all of it's needs over the next ten to twenty years, it could then award bounties or rewards for IR&D program which meet all of the required metrics of specified elements of it's needs. Successful IR&D programs would provide the metrics and trades necessary to support Government low risk research needed to fill in the empty spaces or encourage other industry participation. Industry support for a particular R&D need would show Government a degree of technical maturity and value potential worthy of reward. Payment of a reward (cheaper than actual Government research?) would allow for public disclosure without necessarily obviating proprietary interests. If industry was willing to take the risk, TQM would suggest appropriate reward.

F. Contractual Boilerplate. Why not reduce the amount of each contracts size by selling one set of applicable FAR, Service and Command regulations to each authorized and registered potential bidder that would apply to all Government contracting efforts. This would reduce the contract to just the necessary content plus any exceptions or deviations. Regular TQM contracting forums would keep Government and industry contracting officers in communication and current.

G. TQM and Acquisition Manpower. As was stated earlier, good teams (however formed and maintained) gradually build their own identity, level of personal commitment and operating methodology. Two factors directly affect this success. First, the team finds an acceptable level of stability; that is manpower turnover is limited and the learning curve for new members is direct and positive. Second, all team members gain an overpowering commitment to a vision or objective. Within acquistion programs, this phenomenon is usually tied to the successful completion of an acquisition phase or phases. Regardless, the application of TQ training for all assigned team members throughout the period of team performance is essential to open communication, trust and insuring that all team activity is consistently value added.

H. Change. Within the confines of TQM, change is seen as inevitable and therefore all managers must make it a value added part of the contractual activity. This is especially true given the sole source perception that the ECP process is ripe for exploitation from both Government and industry.

Change would seem to come from two sources, mission evolution and technical advance; each with its attendant considerations. Technical change would seem to have an immediate value added reason for fast implementation but only if the metrics and contractual considerations allow or encourage it. In addition, does the contractor have any reason in place for a line or staff worker to recommend a change that will benefit the Government or customer? Mission evolution requires a much more in-depth amount of preparation. Since mission change in inevitable, it seems plausible that a permanent change team be a working part of any initial contract. Such a contract element should include assigned membership, costing metrics associated with the initial work levels of effort, and responsiveness criteria. While a permanent change team would add cost to the initial contract, it is proposed by the author that it would be exceptionally value added to the life cycle of the program itself.

CONCLUSION

Indeed, the application of TQM to the traditionally confrontational acquisition and logistics processes is primarily one of the acceptance by Government and industry of the imperatives of value added change on a day to day basis throughout all program activity. Further it is the additional imperative that unless that change is fully expected and accepted by each team member, the cost of doing business in no longer competitive or acceptable.

It is not the position of this paper that forces external to the acquisition and logistics, and indeed, all processes will not continue to be significantly effected by non value added external drivers in Washington and the rest of the world. It is our position that the confrontational environments which all too often accompany such situations are no longer survivable and that only by applying TQM principles to the entire program effort can a successful program be accomplished with absolute minimum manpower, time and cost.

Finally, the visions of a confrontationally free program are solely those of the author and in no way reflect the actual tenets of a specific TQM program team. And that is the ultimate vision of a value added acquisition effort - an effort tailored and responsive to customer need over the life cycle. Can we any longer afford anything less?

ABOUT THE AUTHOR

This the fourth paper produced for the conference by Mr. Courtice reflecting his experiences as a program manager and TQM participant within the Aeronautical Systems Division of AFSC for the past six years.