

Implications of TQM for the Industrial Salesforce: Using Control Charts for Continuous Process Improvement

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Sales and marketing research has documented a change in the nature of selling over the course of the last decade. Specifically, industrial sales is moving away from transactional based selling in favor of relational selling. Relational selling is particularly important to organizations wishing to implement Total Quality Management (TQM). The sales process is the primary means by which organizations initiate and develop relationships with their customers. However, a paucity of literature is available on the implementation of TQM at the industrial salesperson level. By using process control charts, a tool of TQM, sales managers and salespeople can monitor the sales process and gain greater insight into how to improve performance. This will facilitate continuous improvement of the sales process, a central tenet of TQM.

Introduction

Over the past decade there has been a substantial body of literature devoted to various aspects and applications of total quality management (TQM) (e.g., Garvin, 1987; Lawler, 1994; Cravens et al., 1993, Gagne, 1986; LaForge, 1993; Tenner & DeToro, 1993, Zeithaml, Parasuraman, and Berry, 1990). In addition to improving product quality, TQM involves continuous improvement of all facets of an organization including relationships with suppliers, customers, and employees. The literature documents well the importance of an organization's relationships with suppliers and customers (external) to a TQM philosophy (Juran. However, the implementation of TQM at the industrial salesforce level has received little attention in the literature. Specifically, little guidance is available as to how an organization's salesforce can use the ideas and tools of TQM to continuously improve their performance.

Increasingly, organizations engaged in industrial selling are turning away from transactional selling in favor of relational selling. Transaction oriented selling involves one-time buyer seller interactions or exchanges with no consideration for future interaction (Dwyer, Schurr, and Oh, 1987). Organizations engaged in relational selling on the other hand, seek to develop long-term, mutually beneficial relationships with their customers. This is especially true for organizations adopting a TQM philosophy.

In many industrial buyer-seller relationships the salesperson is the only contact a buyer has with the selling organization. The salesperson acts as a boundary spanner, representing the only tangible evidence of the seller's potential as a relationship partner. Consequently, the salesperson is the selling organization in the eyes of the buyer (Dwyer et al. 1987). The initiation, development, and maintenance of mutually beneficial relationships with customers are largely the responsibility of the salesperson. Therefore, the success of the relationship depends on how well the salesperson is able to manage the sales process.

Over the years, researchers of professional selling and sales management have examined salesperson control and compensation issues (Anderson and Oliver, 1987, 1994; Cravens et al., 1993). Much of the salesperson evaluation literature has focused on understanding the relative advantages and disadvantages of outcome-based and behavior-based salesperson performance evaluation systems. While behavior-based control systems appear better suited for relational selling, implementation of such systems is perceived as possessing many disadvantages (Cravens et al., 1993; Anderson and Oliver, 1994). Because behavior-based control systems are consistent with the tenets of TQM, adoption of such systems provides sales managers the opportunity to foster continuous improvement while enhancing relational selling performance.

The purpose of this paper is to (1) offer one alternative for operationalizing TQM at the salesforce level (2) explore how statistical process control (SPC) charts in conjunction with sales automation software may be used to combine behavior- and outcome-based control methods into a performance evaluation system that is both comprehensive and easy to understand and implement. Specifically, we offer suggestions for using statistical control chart analysis for enhancing relational selling through continuous improvement of the sales process. Beginning with a review of the relevant literature including, the paper concludes with proposals of how TQM tools impact salesperson productivity.

Buyer-Seller Relationship Development

Traditionally, the marketing literature has treated buyer-seller interactions as discrete transactions (Dwyer et al. 1987; Crosby, Evans, and Cowles, 1990). Dwyer et al. (1987) described such transactions as one-time buyer-seller interactions. Implicit here is the notion is that the seller interacts once with the buyer and does not consciously plan or actively propose to interact with the buyer ever again. Consequently, a growing proportion of research into industrial buyer-seller interactions recognize and explore the value of multiple interactions.

During the mid 1980's, thinking shifted explicitly toward examination of buyer-

seller interactions as relational exchange. Dwyer et al. (1987) describe relational exchange as buyer-seller interactions that: (1) occur over time, (2) are interdependent, and (3) involve some level of non-business related communication. Development of the buyer-seller relationship is a process that involves the following five phases: awareness, exploration, expansion, commitment, and dissolution (Dwyer et al. 1987). Comprehensive discussion of each of these phases is beyond the scope of this paper.

The Sales Process

Several authors have offered models depicting the sales process. Here we refer to the illustration described by Bearden, Ingram, and LaForge (1994). These authors divide the sales process into three stages: (1) initiating customer relationships, (2) developing customer relationships, and (3) enhancing customer relationships. A brief discussion of each stage follows.

Initiating Customer Relationships

Three sub-processes are essential to the success of this stage: (1) prospecting, (2) precall planning, and (3) approaching the **customer**. Prospecting refers to those activities associated with salespeople searching for and identifying qualified buyers. Qualified buyers are defined as accessible, able to afford the seller's product or service, and willing to listen to the salesperson's offer (Bearden et al. 1994). Prospecting is closely associated with the awareness phase of the buyer-seller relationship process described in Table 1. Specifically, the seller becomes aware of potential buyers and then selects only those that meet certain criteria to advance to the next stage. For buyers that the salesperson initially identifies there are two possibilities with respect to the relationship development process. Qualified buyers may or may not be aware of the seller at this time. If the buyer is aware of the seller the relationship either advances (qualified buyer) toward exploration or disengages (disqualified buyer). If the buyer is unaware of the seller, either the buyer must become aware of the seller before expansion is possible (qualified buyer) or the relationship fails to form (unqualified buyer).

Precall planning is the sub-process whereby the salesperson learns about the qualified prospect's situation, history, and any other relevant information that provides insight into how best to approach that prospect. This critical "information gathering" is essential in laying the foundation on which the buyer-seller relationship is built.

Approaching the customer refers to activities associated with initial salesperson-prospect interactions that determine the basis for further sales activity (Bearden et

al. 1994). Activities here include setting the sales call appointment, making first impressions (face-to-face introductions), and initiating rapport. From this point, the sales process advances toward developing customer relationships.

Developing Customer Relationships

In the Bearden et al. (1994) model, developing customer relationships is dependent on two sub-processes - the sales presentation and gaining customer commitment. The presentation sub-process refers to activities related to the salesperson demonstrating competence, candor, and a customer-oriented approach to selling. During this sub-process the salesperson also tries to interact in such a way that the prospect will perceive him or her as being likable. Thoughtful questioning and active listening are important components of the presentation sub-process.

Gaining customer commitment is the sub-process through which the salesperson seeks some form of agreement with the buyer that advances the sales process (Bearden et al. 1994). Gaining customer commitment occurs when the salesperson attempts to accomplish the principle objective or purpose of the sales call, which may or may not involve the buyer actually placing an order. For example, gaining customer commitment may mean the buyer's agreement to meet with the salesperson again. When gaining customer commitment involves a purchase or some other significant gesture by the buyer, it is often an indication that a trust-base between buyer and seller has been established. A trust-base is established under the following conditions: (1) by relying on the salesperson, the buyer assumes risk, and (2) the buyer has incomplete information and relies on the salesperson for pertinent information (Swan and Nolan 1985). Once a trust-base has been established, the sales process advances into the next stage - enhancing customer relationships.

Enhancing Customer Relationships

Enhancing customer relationships, the final stage of the sales call process, consists of activities related to ensuring that customer's expectations are met (or exceeded), including but not limited to, delivery, performance, support, service, and responsiveness to customer concerns (Bearden et al. 1994). In this stage of the sales process, the salesperson (or some-one designated from the selling organization) follows-up with the buyer to ensure satisfaction, and through subsequent interactions, continues adding value to the relationship by providing information, support, and new solutions.

Total Quality Management

Total Quality (TQ) has been conceptualized as "...a means for creating and sustaining competitive advantage in the marketplace through an unrelenting commitment to consistently meeting and/or exceeding the needs of both internal and external customers" (Williams 1993, p. 1). Cravens, LaForge, Pickett, and Young (1993) referred to Total Quality Management (TQM) as a philosophy for improving competitive advantage by embracing a strong customer-oriented approach to the market, maintaining a cohesive and team-oriented corporate culture, and focusing on continuous process improvement through the use of statistical procedures.

While definitions of TQ or TQM may vary in degrees, the underlying themes of "gaining competitive advantage," "customer-orientation," and "continuous improvement" are common to most. These common threads (and the differences) can be traced back to the three men recognized as the premier "quality coaches" - Dr. W. Edward Deming, Joseph M. Juran, and Philip B. Crosby. Each of these "coaches" offer different, sometimes conflicting views on what quality improvement means and how it should be implemented. However, all believe that improving quality is *the key*, to business success. Further, each believes managerial commitment to quality, a team-oriented corporate culture, and continuous process improvement are key components of improving quality (Gagne 1986).

Deming, Juran, and Crosby believe that an organizational philosophy of TQ is crucial for firms competing in today's markets. Yet, most of their work and, in fact, most of the research related to TQ and TQM, is based on manufacturing processes, employee involvement, and/or relationships with suppliers. A growing research stream in the marketing literature relates quality issues (TQ) to the production and marketing of services, and customer service in general (Parasuraman, Zeithaml, and Berry 1985; Zeithaml 1990). Little research however, has been conducted regarding how TQM philosophies affect the seller's side of the equation -- the activities of the industrial salesperson.

Research addressing how TQM philosophies affect the industrial salesforce is scarce, but slowly developing. Most of the work has focused on performance evaluation and compensation structures, and how they may or may not conflict with TQM philosophies (Cravens et al. 1993; LaForge 1993). For example, the Deming, Juran, and Crosby views of TQM suggest that performance appraisals and compensation structures should not be tied to outcomes like gross sales, per unit sales, sales quotas, market share, etc. Yet, the most common forms of industrial salesperson compensation include commissions or bonuses based on one or more of the aforementioned outcomes (Bearden et al. 1994). Performance evaluations and compensation are, in a sense, outcomes themselves in that they are one function of how effectively salespeople performed selling activities. What has yet

to be addressed is how salespeople can adopt TQM principles to improve their performance, which in turn will directly affect evaluations and compensation.

Behavior-Based vs. Outcome-Based Control Methods

Output-based control systems use objective measures of outputs such as sales volume to evaluate salespeople's performance. Output-based control systems involve little managerial interaction with salespeople as managers evaluate the "ends" rather than the "means". Consequently, these control systems tend to be used in conjunction with commission-based compensation systems (Oliver & Anderson, 1994). In contrast, behavior-based control systems gauge salespeople's performance through subjective evaluation of their selling and non-selling behaviors. Because managers evaluate the "means" rather than the "ends," a high degree of managerial involvement (monitoring, directing, and so forth) is required. Organizations using behavior-based control systems typically use salary-based compensation systems (Oliver & Anderson, 1994).

The relevant literature suggests behavior-based and outcome-based evaluation methods represent anchor points on a continuum, and determination of the most effective type of control system is a function of the selling environment. Further, the literature indicates that while exclusive use of either outcome-based or behavior-based systems is rare, most organizations rely predominately on one or the other (Cravens et al., 1993b). However, the trend toward relationship marketing (requiring salespeople to focus on relationship development which is more behaviorally intense and long-term oriented) suggests behavior-based evaluation systems may become more appropriate for organizations engaging in relationship selling activities. Yet, because behavior-based methods require a high degree of managerial involvement, resistance to this change is common.

Statistical Process Control Charts and Performance Evaluation

One of the guiding principles of Total Quality Management (TQM) as described by Deming, Juran, and Crosby is continuous process improvement, which means constantly working to reduce variation (Tenner and DeToro, 1993). Variation in processes has two main causes: common (system-wide), and special (unique) (Tenner and DeToro, 1993). Common causes of variation are those that are inherently part of the system and not a function special circumstances. A process that is experiencing variation resulting from only common causes is considered stable. That is, a stable process is one in which its outputs can be predicted within statistically established limits. Special causes on the other hand, are independent of conditions operating in the process; that is they are not inherent to the process. Processes that are experiencing variation resulting from special causes are

considered to be unstable. Specifically, their output falls outside statistically established limits. Applying the concept of process control and improvement to the industrial selling effort presents an interesting opportunity for salespeople and sales managers to improve performance evaluation.

Cravens et al. (1993a) suggested SPC charts could be used to better develop outcome benchmarks (e.g., sales volume goals), and evaluate salespeople's performance based confidence intervals around those output benchmarks. Unfortunately, Cravens et al. (1993a) stopped short of developing the use of SPC charts to its full potential. Specifically, they failed to include selling behaviors as a base to evaluate salespeople through SPC charts. Perhaps the authors used outcomes exclusively because they are easier to measure and understand than sales behaviors.

Sales managers can use SPC chart analysis to help identify how much of performance variation can be attributable to the individual salesperson (special cause) and how much is a result of common causes. For example, consider application of control chart analysis to the sub-process of initiating customer relationships. Calculating the ratio of identified prospects to those given a formal sales presentation could be considered a measure of qualification effectiveness. Computing this ratio over specified time intervals provides the basis for a control chart. Prospects incorrectly qualified, qualified but not interested in a sales call, or otherwise lost in this first sub-process would be considered variation. Then, confidence intervals are constructed using the variation (standard deviation) statistics. If the process is stable, all salespeople are performing equally well. Improvement of the process would result from making changes to the process. For example, additional training could be provided on how to qualify prospects, thereby reducing variation.

Sales Automation Software and Performance Evaluation

Sales automation software, such as *Winsales* by Winsales Inc. will monitor the "sales funnel," tracking customers as they move through the sales cycle. This allows the salesperson to track the number of customers in each stage of the sales cycle, the progress of each customer through the cycle, the overall success rate (the ratio of customers making it through to commitment to those entering the "sale funnel"). Moreover, the software tracks, by customer and overall, the type and number of activities (letters, proposals, phone calls, sales calls, etc.) performed by the salesperson during a given period of time.

Such salesforce automation software packages provide a great deal of information (available in real-time) that can be used for performance evaluation. The

information may be used in raw or standardized form by the salesperson (for self-evaluation), the sales manager (to evaluate salespeople and self-evaluation), and senior management (to evaluate sales management). Further, because the information collected includes activities and results, behavior-based, outcome-based, or combination performance evaluations are possible.

At the salesperson level, salespeople using the information tracked by the software can create real-time SPC charts that allow them to monitor their progress and their effectiveness against both subjectively determined levels and any aggregation of the company's salesforce (at the district, region, national, or global level). This provides the salesperson with continuous performance feedback and identifies areas of weakness and strength. For example, salesperson's running average number of interactions with the customer (on average) required before performing a product demonstration compared to the organization running average might provide insight into that salesperson's communication skills.

At the managerial level, the software aggregates the data allowing the manager to make easy comparisons of salespeople's behaviors and outcomes. Ideally, the system will be stable and the manager can focus on how to improve system-wide performance (training, promotions, and so forth.) However, the SPC charts may identify salespeople to which unique variation is attributed so that the manager can act accordingly. Process instability resulting from a superior performer requires different attention (strive to improve the level of acceptable performance to include the superior performer) than instability resulting from an inferior performer (strive to raise the performance level of the inferior performer to the acceptable performance range). In addition, the degree of common variation provides sales managers with feedback on their performance. Managers should seek to improve the mean performance statistic while reducing variation among the salespeople. For example, providing salespeople with a special training program on writing sales proposals might increase the "proposals made to orders taken" ratio mean while reducing the variation.

At the senior management level, SPC charts may be used to evaluate sales managers in the same manner sales managers evaluated their salespeople--albeit at a higher level of abstraction. This information will reflect salesforce performance overall and provide upper management insight into the type and extent of variation being experienced. Once identified, variation-type specific action can be taken.

Propositions

The sales process lays the foundation for trust-building and relationship development. Control chart analysis can be used by salespeople and sales

managers to understand better the variance in productivity. Armed with this understanding, they may take steps to reduce causes of variation and improve the relationship development process. This leads to the following propositions:

P1: Statistical process control of the sales process will allow salespeople and sales managers to distinguish between common and unique sources of variation.

P2: The use of statistical process control analysis will allow sales managers and salespeople to identify unique areas of variation which may be addressed (stabilizing the system) in terms of improving salesforce performance.

To reduce common causes of variation, sales managers and sales people must change the conditions of the process or make modifications to it. For example, additional training or salesforce automation are often used in an effort to improve salesforce productivity. Through statistical process control, the effects of these system enhancements can be monitored. Overall improvement in the outcome measured or a reduction in variation would lend support to the notion that the enhancements were having a positive impact on productivity. This leads to the third research proposition:

P3: Statistical process control will allow sales managers to gauge the effectiveness of training, or other inputs/modifications into the system designed to improve productivity.

Discussion/Implications

Implementation of TQM tools, such as the control chart technique illustrated here should help the salesforce to improve their performance and productivity. Concentrating on improving the processes and relationships should yield increased performance and productivity irrespective of the outcome measures used to evaluate the salesperson (gross sales, market share, etc.). At the same time use of control charts will help sales managers better evaluate their salespeople through understanding the relationship between fluctuations in criteria used for evaluation/compensation and the causes of the variations. Thus, implementing TQM tools will help improve salesforce productivity and provide a more information from which sales managers can make more insightful evaluations of their salespeople.

Conclusion

The degree to which the salesperson performs the sales sub- processes directly impacts the relationship development process. By improving the sales sub-

processes the salesperson can shorten the relationship development cycle, and improve the strength of the relationships.

Behavior-based control systems appear better suited for relational selling. The advent (and increasing sophistication) of salesforce automation software is reducing the disadvantages associated with behavior-based control systems. This will allow more organizations to shift toward this form of evaluation which more clearly reflects the performance of the salespeople relative to factors within their control. The use of SPC charts will provide management with greater insight into the factors affecting performance at the salesperson and salesforce levels. Specifically, system variation will be separated from unique variation allowing management to understand better the appropriate actions required to improve overall sales process improvement.

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