Improving the Odds: Combining Six Sigma and Online Market Research for Better Customer Service

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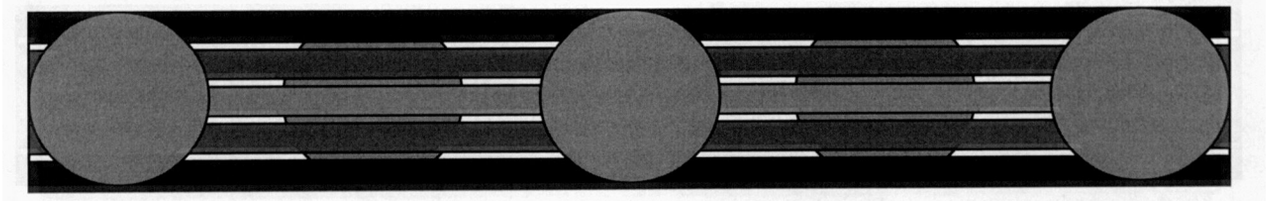

As the world of technology becomes more and more sophisticated, businesses find themselves with an overabundance of customer service management software. While this software continues to invade the marketplace, some companies use it to effectively cut themselves off from their customers. As budgets get leaner and companies get meaner, the responsibility for customer care falls to technology. We ask customers to jump through voice-activated hoops or press buttons through phone-activated menus while their frustration grows. Companies juggle too many balls with fewer employees and rely on technology alone to monitor customer satisfaction.

This lack of human contact is a major reason for customer dissatisfaction. Companies find themselves competing to regain customers they should have taken care of in the first place. Even if the product is flawed, a good front-line employee can assuage the issue with good customer service that retains a customer's loyalty. As the human element gets lost in the shuffle, the customer is often the ball that is dropped. Technology should be used to enhance, rather than replace, the human element of customer management.

This paper proposes a way that technology can be combined with quality management techniques to re-bridge the customer service gap. Specifically, innovative online marketing research methods are demonstrated within the context of the Six Sigma approach to quality improvement. The goal is to systematically generate actionable information that will enhance the ability to swiftly attend to customer satisfaction issues by making managers responsible for bringing human contact back into the realm of customer relationship management (CRM).

Market research has always been a powerful tool enabling companies to gauge customers' needs, wants, desires, and satisfaction. However, with regard to customer satisfaction, if the data are not usable, reliable, relevant, and timely, a company wastes its energy and resources. Furthermore, a business must react immediately to the information or the whole venture is an exercise in futility. Therefore, this paper focuses on using timely, actionable research as a management tool for customer loyalty and retention. By combining a market research collection method (online surveys) with a management philosophy (Six Sigma), a company can maximize its profits and radically improve ROI by returning to square one — the customer.

The ability of employees to access centralized customer service data from anywhere at any time can give firms a strategic advantage against the competition (McClure, 2003). Online research with portal privileges allowing instant access to answers creates a decision support system (DSS) whereby managers can make decisions immediately. By hedging problems from the start, companies are in a better position to meet and exceed their customers' expectations. Employing an online user-friendly DSS that is accessible to front-line managers will expedite the ability to serve customers instantaneously. Instead of seeing market research as a wasted expense, companies can improve the bottom line by making customer satisfaction data relevant, reliable, and, most important, actionable.

The remainder of the paper examines Six Sigma and online research techniques, including

a proprietary system for merging these concepts. Two examples are presented, along with recommendations for improving online market research.

The Game Plan: Six Sigma

A strong foundation for approaching customer service improvement can be found in Six Sigma. GE, a long-time advocate of the Six Sigma program, succinctly describes this management tool on their Web site:

> "First, what it is not. It is not a secret society, a slogan or a cliché. Six Sigma is a highly disciplined process that helps us focus on developing and delivering near-perfect products and services. Why 'Sigma'? The word is a statistical term that measures how far a given process deviates from perfection. The central idea behind Six Sigma is that if you can measure how many 'defects' you have in a process, you can systematically figure out how to eliminate them and get as close to 'zero defects' as possible."

Six Sigma is a long-term, forward-thinking initiative designed to fundamentally change the way corporations do business. It is first and foremost "a business process that enables companies to increase profits dramatically by streamlining operations, improving quality, and eliminating defects or mistakes in everything a company does." While traditional quality programs have focused on detecting and correcting defects, Six Sigma encompasses something broader: It provides specific methods to recreate the process so that defects are never produced in the first place (Harry and Schroeder, 2000).

The following chart, from the GE Web site, shows the key concepts of Six Sigma.

The ultimate goal of Six Sigma is flawless performance and zero defects, with a defect defined as anything that results in customer dissatisfaction. As a result, many traditional ways of measuring success simply do not apply. For instance, the normal measure of customer satisfaction data is based on the top-two box score, which is a combination of the top-two ratings, such as "excellent" and "very good." This score reflects how well the customer is satisfied with a particular attribute, showing only the good aspects and failing to recognize the deficit. The following quotes and comments from the National Automobile Dealers Association (NADA) convention reveal growing concern with the inadequacies of this method (Connelly et al., 2004):

> J.D. Power and Associates, recommended moving away from top-box scoring systems in favor of a mean-based system of scoring.
>
> Ford Division said it will cut in half the length of its four-page customer-satisfaction survey and will consider dropping the so-called top-box scoring method despised by dealers. Currently, dealers earn customer-satisfaction credit only if the customer checks the top box, indicating the highest level of satisfaction.
>
> Hyundai Motor America also is reducing the number of survey questions and is eliminating its top-box requirement for sales and service. Says dealer Todd Buch of McCafferty Auto Group in Langhorne, Pa., "Top box creates an environment where dealers coach the score instead of trying to improve their processes. We're not really working on customer satisfaction."
>
> "For a long time, a lot of brands and manufacturers were focused on a scoring system that forgot what matters — and that is taking care of the customer," says Joe Eberhardt, Chrysler group executive vice

Critical to Quality:	Attributes most important to the customer
Defect:	Failing to deliver what the customer wants
Process Capability:	What your process can deliver
Variation:	What the customer sees and feels
Stable Operations:	Ensuring consistent, predictable processes to improve what the customer sees and feels
Design for Six Sigma:	Designing to meet customer needs and process capability

Source: GE Web site

president of global sales and marketing. "Customer satisfaction purely as a score is meaningless."

"Efforts are under way to simplify customer-satisfaction surveys while generating meaningful data. Dealers have complained that the measures were imprecise and lacked data that told dealers how to improve," says Carl Swope, dealer principal of Swope Toyota in Elizabethtown, Ky.

"We need more detailed information than just dots on a page," says dealer council chairman Steve McDaniels, dealer principal at Maplewood (Minn.) Toyota. "We need help identifying problem areas."

In pursuit of improved assessment, a company should determine what system is optimal for measuring their own business process capability in order to meet the specifications of the customer. Scale selection could be based on cycle time, costs, or rating means (e.g., a 10-point scale). Each attribute could require a different scale measurement to assure accurate information. By using statistical analysis to minimize variation, Six Sigma enables process improvements that are predictable, repeatable, and based on actual data (Microsoft, 2003).

The basic road map for Six Sigma quality improvement has five steps: define, measure, analyze, improve, and control (DMAIC). First, define the scope and expressed critical-to-quality (CTQ) elements. Then, measure a problem (metrics), analyze the process, improve the process, and implement controls to maintain the improvement (Rioux, 2000). Applying the Six Sigma principles to customer service data, managers focus on what the customer feels rather than how well the company is doing. In other words, managers concentrate on the variance (deviations from perfection), because that is what the consumer feels. Most companies focus on the top two-box score instead of the areas that need improvement. By removing the box score element, managers look at the mean score and strive to make perfection. The ultimate goal of customer satisfaction is increased revenue and customer retention. To attain these goals, a company must focus on why they lose customers and where their processes fail. Return on investment for building customer relationships is not found in "pats on the back" but rather in the places where the company sees the variation between actual and desired experience.

There are several aspects of Six Sigma significant to improving customer service. Voice of the customer (VOC) is a central concept within the Six Sigma methodology. Process performance can be measured only if an organization is aware of the critical customer requirements (Folpmers, 2000), and the only way to achieve this is to ask the consumer. Tom McCarty, vice president of Motorola University Six Sigma Services and coauthor of the book, *The New Six Sigma*, describes this process as looking for opportunities for customer engagement. By hearing the voice of the customer, and then working in partnership with the customer to develop strategic growth plans, a company will not only understand where its customers are heading and why, but also will create a relationship of trust (Ruff, 2000).

In comparison to total quality management, Six Sigma focuses directly on the customer. TQM tends to improve everything, is not targeted to a process or business, is frequently without focus, and does not attempt to project a performance level. Six Sigma, on the other hand, is a targeted process with a defined scope that sees the greatest opportunities in nonmanufacturing. TQM's strength lies in the manufacturing arena and focuses less on service, logistics, or marketing. In contrast to a management theory that uses a "scattershot" approach, Six Sigma is more structured and profit-oriented (Gabor, 2001) and harnesses the power of the customer, who is the ultimate beneficiary.

Counting the Cards: Online Research

Generalized customer information may be nice to have, but targeted research that seeks answers to specific questions is more likely to yield actionable results (Colby, 2003). Because online research provides fast, accurate, and inexpensive data, customer satisfaction is an excellent target for this method. While online research is still in its infancy, the future is unlimited if a company can harness its own customer database. Furthermore, online research delivers superior results over traditional methods because it leverages the unique strengths of the Internet by:

- ★ eliminating group bias and dominant personalities;
- ★ getting unrushed and thoughtful answers

from each respondent;
- ★ gaining instant responses from your entire sample;
- ★ having the ability to test, change, and retest on the fly (Sang, 2003).

In addition, surveying customers immediately at the "post purchase" point and at a follow-up point allows companies to evaluate products or services from first impression to a "settled-in" perspective. Online research is able to quickly and efficiently gather this information for comparative analysis. Because of the speed of the Internet and its worldwide accessibility, we can measure, almost instantaneously, the impact of a crisis in a company's reputation track it, and address it, as necessary (Taylor, 2000).

Unfortunately, the fear of metrics can cause managers to jump into a firefighting mode rather than a fire prevention mode. They begin to implement post-emptive action rather than preemptive action. They often do not appreciate the importance of creating meaningful metrics that give insight into how their business processes perform over time (Smith, 2004). High-level control charts get organizations out of firefighting mode and into fire prevention mode. When one of these charts identifies an in-control or predictable process that is not capable of consistently producing a desired level of response, managers can "pull" for the creation of a Six Sigma approach to improve the process. This is much better than "pushing" processes that have questionable value (Smith, 2004). In other words, the implementation of a Six Sigma approach allows managers to step back and evaluate a more suitable method of problem resolution rather than employing haphazard solutions that may or may not work.

A Winning System: Putting it All Together

With the Internet finding a place in the business world, online reporting is taking on a new role. Information users are now accessing survey data from their desktops and slicing and dicing it over the Internet in ways that suit their particular needs (Hogg, 2001). Using a real-time data collection method produces actionable information virtually overnight and generally within minutes of completing a survey. Furthermore, adding the principles and elements of Six Sigma to the data makes the information dynamic, robust, and easily measured.

One example of this approach comes from Allen Falk, president and owner of STARS (Survey Tabulations and Research Systems, Inc.). STARS forged strategic alliances with innovative companies to provide top-level market research analysis and summaries in real time. These alliances allow clientele access to time-critical information leading to a market advantage over the competition and the ability to quickly spot market trends. Rather than forcing the data to conform to a particular piece of software, STARS built a reporting tool to satisfy the unique needs of each customer. The outcome was the development and creation of the MMISΣ^{TM} system (marketing management information system sigma), a highly customizable system adaptable to any type of readily accessible data.

MMISΣ^{TM}, based partly on the Six Sigma principles, allows managers to instantaneously access customer satisfaction information. Rather than using box score information, the system shows "means" and deviations from perfection. Managers are able to focus on areas that need improvement as opposed to exerting effort in areas that are perfect or nearly so. The system is highly customizable and can be applied on a local, regional, district, or corporate level, with a gatekeeper having access to all data.

As the marketplace experiences the paradigm shift from traditional research to a more useful application of customer service data, online reporting has taken a giant leap forward. The Internet has transformed more than marketing research data collection. The Web is also changing how research results are disseminated (Hogg, 2001). Systems such as MMISΣ^{TM} are designed to provide results to managers and decision-makers in the absolute simplest format to make it easy to find the actionable data. They are not meant to be a data mining tool that expects mangers to be experts in statistical analysis. The ease of operation makes the data functional, useful, and an effective tool that does not require the manager to be saddled with volumes of unmanageable information. The ability to drill down to a specific respondent's survey and chart basic data in lieu of conventional statistical analysis is a valuable management tool that directly affects profitability. While information in aggregate is useful when looking at top box score information, it is not as useful for pinpointing problems.

A major advantage of a system like MMISΣ^{TM}

is the ability to disseminate actionable information quickly. This alone makes the system unique in its ability to make decisions instantaneously. When used in combination with online collection methods, telephone interviewing, or a combination of both, the results are usually available within 24 hours. In comparison, traditional research can take months to collect, process, and analyze before it reaches the decision makers. MMISΣ™ allows front-line managers to quickly understand why customers are complaining and identifies internal processes that cause dissatisfaction. It can also quickly diagnose a company-wide problem or a particular location problem.

Playing for Real Stakes: Case Studies

A company does not have to employ the full Six Sigma program to enjoy the benefits. Six Sigma, in its basic form, is a way of diagnosing areas of improvement, leveraging information, and making improvements. The most important aspect of the Six Sigma management theory is the ability to measure success and failure. The VOC (the voice of the consumer) and CTQ (critical to quality point) jump into the forefront of the theory. If a company can use these principles to improve customer service swiftly, they have created their own competitive advantage. A system like MMISΣ™ highlights both of these ideals.

The impact of the MMISΣ™ system can best be viewed with two case studies. The first company profiled is Peterbilt Motor Company. The second case study shows a modified system applied to higher education, focusing on Texas Woman's University.

Case 1: Peterbilt

In 2002, Russell Cox, marketing analysis and research manager, and Scott Pearson, general sales manager, recognized the need to change the paper-driven customer satisfaction system their company had survived on for years. As the marketplace became technology-driven, their idea for an online reporting system became paramount. With stiff competition for consumer dollars, Peterbilt understood how critical customer service was to the bottom line. They knew that the front line employees, specifically on-site managers, must have actionable information. STARS and Praexis designed a DSS for Peterbilt that generates customer service data in a way that provides information in a user-friendly fashion to dealerships across the nation.

Peterbilt's customer satisfaction data are collected by telephone, then entered via the Web. The data is "scrubbed" and entered into the reporting tool within 24 hours. In addition, Peterbilt customers are encouraged to complete the online survey. Peterbilt sends letters detailing the need for customer feedback and supplying the URL. While offering incentives to their customers who use the Web survey, they are also educating customers on Web use. As they educate customers, the cost savings of transitioning from phone to pure Web will be another boost to the bottom line.

Customer preferences are often unbalanced (everything is important), vague, and unstable (Folpmers, 2000). Once Peterbilt determined the attributes that could help it improve customer service, it focused on questions that gave VOC prominence. Peterbilt's MMISΣ™ system includes the ability to flag critical questions whose scores fall below the hard-deck (CTQ), automatically triggering a "concern alert" that Cox is able to access on a daily basis. He notifies the dealership or department of the alert so they can follow up with the customer immediately. In addition, Cox can generate information based on several different filtering capabilities. He can pinpoint problem areas immediately and head off problems before they become fires. The system also allows him to track the time from initial alert to final disposition of the problem. Each dealership is required to assuage their customer's complaint before it escalates to customer loss. The desire to know everything crucial about each customer and his or her needs will lead to increased revenue when the response is quick and efficient. Peterbilt has put the ability to quickly understand what is going on in a particular plant, region, district, dealership, or truck model into the hands of the managers who make the decisions, thereby making them accountable not only to the company but, more important, to the customer.

While still in its infancy, Peterbilt has been able to see results that are actionable. By using Six Sigma's VOC and CTQ point, and by getting hard, fresh data, they are able to correct problems within a 30-day interval and compare the results at the 18-month interval. The dealership contacts the customer and rectifies the issue. This action engages the dealership with a voice representing the company, and the customer feels heard and feels important. The point of this

application is to leverage customer information to gain perfection, giving the consumers what they want rather than what the company thinks that they want. It creates a trusted partnership.

Peterbilt's initial foray into this type of system immediately generated a change in process. Dealerships are now accountable for their consumers' satisfaction, and this accountability necessitates immediate feedback. Using a market research collection method that immediately feeds into a management tool facilitates this immediacy. Customer issues addressed after the consumer is already dissatisfied result in the loss of bottom-line dollars. It is difficult for any business to regain them.

Peterbilt managers view low scores company wide. They sort, pinpoint, and determine whether the collective means indicate a need for a company-wide change or just a dealership process change. Furthermore, the dealerships access their scores and are able to assess themselves against their group and Peterbilt as a whole. Each dealership has the ability to "pull" for a Six Sigma based on the mean scores of each survey attribute relative to their own scores rather than relying on company-wide scores. As the front-line to the consumer, it is imperative that dealers have the ability to address consumer dissatisfaction directly.

Case 2: Texas Woman's University

Texas Woman's University (TWU) is a mid-sized coeducational state university. The proximity to the Dallas-Fort Worth Metroplex and growing demand for executive education led to the creation of an Executive MBA (EMBA) program at TWU. The program is innovative, with courses being offered consecutively in five week blocks. Each course meets on three Saturdays at convenient off-campus locations, and the remainder of the course is administered online. Students who go straight through the program can graduate in 15 months. The challenge for TWU was to understand this unique target group of students and monitor the effectiveness of the innovative program techniques.

TWU used a variation of the MMISΣ^{TM} system to customize an online survey system that allowed immediate feedback from each graduating class. When the initial EMBA graduating class approached the end of the program, students were able to access the online survey and give responses on everything from course content to program structure. Rather than settle on general satisfaction levels, key points of dissatisfaction were identified and addressed. The system allowed professors and administrators to make immediate adjustments for the following semester.

The prompt feedback led to changes that resulted in significant improvements in almost every area. For example, perceived problems with textbooks led to revamping the way textbooks were selected. Many courses went to customized textbooks at a lower cost to the students. The goal of the survey system is to produce immediate, actionable information that can pinpoint target areas for closing the gap in customer satisfaction. Challenges include getting more frequent customer information and making sure the right people get the information quickly in time to correct gaps in satisfaction.

Don't Leave It to Chance: Lessons Learned

Organizations today must make rapid decisions in a dynamic environment. Fast-changing technology can be a friend or foe. The MMISΣ^{TM} system offers one way to make technology an ally. Through timely information gathering and management and a focus on Six Sigma quality, companies can get the right data when they need it to make critical decisions. The two case studies presented here give a brief glimpse of the potential benefits of an online decision support system. Following are some lessons learned from the growing, dynamic field of online market research. (See Dimetrosky et al., 2001 for additional guidelines for online research.)

- **Make sure the research provider and client work together.** A collaborative effort focusing on the customers is the best way to ensure an effective DSS.
- **Establish a clear process for getting information to the right people.** Timely, actionable information is useless unless it is received and acted upon by the employees who can make a difference.
- **Remember the digital divide.** Many people still do not have Internet access or are not comfortable with online surveys. One way to bridge that gap is to collect information via telephone and have interviewers enter the data online.
- **Use a reputable supplier.** Some market research companies may not have the formal training and experienced research

professionals to design and manage an effective Six Sigma-based decision support system. Check out your supplier just as you would a new employee.

In today's rapidly changing environment, technology can be wrongly used to distance a company from its customers, or it can be used to bridge the gap. The MMISΣ^{TM} system used in the two cases demonstrates one way that online methods can be combined with Six Sigma practices to enhance customer satisfaction. Companies benefit from having the right information at the right time and getting it directly to the proper decision makers. This allows them to quickly address customer service gaps and identify quality problems before they affect many other customers. Many conventional approaches to tracking customer satisfaction take too long to get information to the right people or focus on less-efficient measures. Future advances should address the mass customization of the approach presented here for multiple industries, allowing technology to work with Six Sigma practices to improve customer satisfaction.

Dr. Rylander teaches marketing research and Internet marketing and consults for large corporate sales forces. His publications and conference presentations have addressed sales force socialization, channels strategy, and green marketing. Tina Provost is the e-platform solutions manager for STARS, and is completing MBA studies. She currently works with major companies to assist with developing online research and reporting tools.

REFERENCES

Adams, Gupta, and Williams. (2002, December). Six Sigma deployment. *Adams Associates Newsletter.*

Colby, D. S. (2003, May). Using marketing research: Views from a CFO. *Quirk's Marketing Research Review*, 44–47.

Connelly, M., Guilford, D., Harris, D., Kachadourian, G., Rechtin, M., and Wilson, A. (2004, February 9). Sides closer on customer satisfaction. *Automotive News*, 26.

Dimetrosky, S., Khawaja, S., and Degens, P. (2001, January). Best practices for online survey research. *Quirk's Marketing Research Review*, Retrieved from http://www.quirks.com/articles/article_print.asp?arg_articleid=656.

Folpmers, M. (2000). VOC/Conjoint analysis: Actionable customer segmenting. *iSixSigma.* http://www.isixsigma.com/library/content/c050404a.asp

Gabor, A. (2001). Quality Revival, Part 2: Ford embraces Six Sigma. *The New York Times*

GE Web site (2005). Six Sigma strategy. http://www.ge.com/sixsigma/sixsigstrategy.html.

Harry, M., Schroeder, R. (2001, January, 10) Six Sigma, *The Breakthrough Management Strategy Revolutionizing The World's Top Corporations.*

Hogg, A. (2001). Conducting online research. *American Marketing Association.* Retrieved from http://www.marketingpower.com/live/content984.php.

McClure, D.S. (2003, May). Using marketing research: Views from a CFO. *Quirk's Marketing Research Review*, 44–47.

Microsoft (2003, August). Six Sigma: High quality can lower costs and raise customer satisfaction. Retrieved from http://www.microsoft.com/office/business/articles/sixsigma.mspx.

Rioux, P. (2000, May 1). Six Sigma: Improve your customer service. *IRED.*

Ruff, M. (2000). At the customer, for the customer (ACFC). *iSixSigma.* http://www.isixsigma.com/library/content/c050214a.asp.

Sang, K. (2003, August, 1). Qualitative, quantitative methods combine for best online research. *Selling.*

Smith, K. (2004, June 21). Six Sigma for the service sector. *Quality Digest.*

Taylor, H. (2000, April). The power of online research. *Quirk's Marketing Research Review.* Retrieved from http://www.quirks.com/articles/article_print.asp?arg_articleid=582, 1–3.

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Volume 71 Number 1 Winter 2006