

Six Sigma Sharpens Services in Telecommunications

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Six Sigma is increasingly transforming service industries, such as telecommunications. Since this revolutionary approach to quality was first developed at Motorola, refined at Allied Signal, and became the stuff of legend at G.E. under Jack Welch, it has spread throughout service industries like outsourcing, financial services, and telecommunications.

At first blush, Six Sigma, originally designed to perfect manufacturing processes that were already highly engineered, might seem ill-suited to services, where processes aren't engineered at all. But that's precisely the point. Because many service businesses have never analyzed their business processes, they often suffer from inflated costs and poor customer service.

From Task to Process

The initial insight about the wider applicability of Six Sigma was born at GE. The company understood that Six Sigma techniques could be applied to any process that resulted in defects, whether the defects were faulty products, financial transactions, or business processes. GE soon expanded Six Sigma to its service businesses, such as GE Financial.

The heart of every service-based business depends on the opinions, behaviors, and decisions made by people operating through work processes, whether the processes are recognized or not. Analyzing and modifying human performance in these environments is as complex as any manufacturing situation. Nevertheless, most services companies take a task focus: sign up more wireless customers, get a call center up and running. Six Sigma brings a process focus: improve customer service processes to retain wireless customers, analyze customer problem resolution.

Telecommunications

Following that solid record of success in financial services, the next Six Sigma revolution is likely to take place in telecommunications. Both the telecommunications equipment sector and the telecommunications services sector of the industry have been badly battered in recent years. Total spending on equipment fell by about 15% in 2001 and fell another 20% in 2002. Long-haul optical networks now operate at below half of their capacity. Until sales of core wireline equipment pick up, manufacturers in the US and Europe also face the challenge of developing new products to deliver data and voice traffic from long distance networks to broadband customers in urban areas. The mobile communications segment is also changing as exhaustively hyped mobile data services and the tide of third generation wireless technology arrive.

In the telecommunications services sector in the late 1990s, the word was: "Build it and they will come." Following passage of the Telecommunications Act of 1996, the telecom sector rode the high-tech current of an economic expansion that, in retrospect, appears to have been built on blind faith. In the five years that followed passage of the 1996 legislation, the telecom industry received \$1.3 trillion from investors, and has since lost more than \$1 trillion in market value.

For telecommunications equipment and services, short- and long-term success depends on excelling in operational focus, financial discipline, and opportunistic growth. Six Sigma can help with all three. A sampling of highly focused projects begins to suggest the enormous potential of applying Six Sigma even more widely across the numerous functions and processes on which telecommunications companies depend:

Increasing sales force availability for customers in emerging markets: Relentless competition in telecommunications requires an account team that can assess customer needs and submit quotes quickly. Nevertheless, Six Sigma analysis found that salespeople in the emerging market for a telecommunications provider spent on average some 52% of their time in non-value-added activities such as travel, meetings, and customer service issues – despite the fact that the company was depending on increased sales force productivity to weather the economic downturn and industry turmoil.

Six Sigma analysis uncovered statistically and economically significant relationships between the time spent on non-value-added activities and (1) the geographic layout of a salesperson's territory, (2) whether they set their own customer appointments or had appointments set for them, and (3) the level of their time and territory management skills. The company addressed all three factors by setting up a special call center team to set appointments for salespeople and developed a process for route management that enabled the team to prioritize appointments in the most geographically efficient way. As a result, salespeople now spend far more time in front of prospective customers, save money on travel, and spend far less time in non-value-added activities – increasing annual sales by nearly \$1 million.

Reducing the sales to cash interval: As a PBX dealer/distributor's selling model shifted to resale, the company needed to more accurately forecast and to accelerate customers' payments after installation in order to reduce exposure to creditors. The sales to cash interval averaged four months, whereas reducing it by only one month would save \$550,000. However, the company's sales to cash process is complex, with numerous interdependencies that can cause excessive delay. A Six Sigma team found that the longest interval under direct control is the time from installation to posting of the invoice. The average time stood at 18.3 days, costing the company \$420,000 annually in delayed revenue.

Focusing on this critical interval, the team developed a data base to track an order through its entire life, created tools for process operators to monitor overdue orders, modified the process for more direct operator communication, and developed a means for regular process control review and discussion. The interval was reduced by 7.5 days, which will result in annual savings of \$420,000. In addition to increasing the accuracy and timeliness of customer billings, improving forecasting accuracy, and reducing internal costs, the project led to modifications in setting customer expectations and paved the way for an improved collections process.

Reducing business market collections: A telecommunications provider, focused on generating sales revenue in its business market, performed poorly when it came to collecting that revenue. A preliminary analysis by a Six Sigma team determined that 60% of billed revenue, or approximately \$25 million, went 60 days past due every month – jeopardizing the company's objective to achieve positive cash flow by the end of the year.

Combining powerful Six Sigma analytical tools and Business Process Management, the team's program to reduce the 'defects' in the collections process included reprioritizing collections work, assigning collections representatives to strategic accounts, conducting collections 'blitzkriegs', stopping the high turnover in the collections manager position, and implementing a new call strategy. The project reduced by almost 18% the total past due greater than 60 days, increasing revenue by \$2.4 million.

These necessarily narrow examples touch on only a few of the many processes and functions that telecommunications entails. From maintenance, procurement, and operations to customer care to sales to reducing cycle time, cost-per-transaction, and duplications, Six Sigma is likely to make an enormous difference in customer satisfaction, revenues, and costs. And as Six Sigma spreads to more and more of those functions, the impact will grow exponentially.

Succeeding with Six Sigma

Successfully implementing Six Sigma in services businesses requires a relentless focus on customers and on meeting their needs as efficiently as possible. It entails four critical steps:

Define what is critical to your customers and confirm that your core processes are aligned to those requirements. As the term 'services' implies, you must understand your customers' needs before you can serve them. Find out what those needs are. There are many ways to uncover those needs – through surveys, call center results, focus groups, promotional campaigns – whatever means allows the voice of the customer to be heard loudly and clearly. At the same time, you must understand the key business issues for your company and align the voice of the customer with them.

Translate customer requirements into measurable characteristics of your processes. Once you understand customer requirements you must be able to measure the effectiveness and efficiency of your processes in fulfilling those requirements. Effectiveness addresses the problem of 'defects' that your processes produce; efficiency addresses the time and money that the processes consume in meeting customer needs. A high rate of defects or time and money wasted in non-value-added activities increases your cost-per-transaction. The formula for translating customer requirements into measurable characteristics is simple: 'as measured by.' For example, if on-time delivery is important for your customer, then the metric would typically be 'on-time delivery as measured by the time from the promised date to the date of actual fulfillment.

Quantify the impact of particular gaps in your processes in terms of the cost of poor quality (COPQ). For example, a mortgage lender whose customers want fast action on their applications might find that the process includes a high number of abandoned calls by customers, long delays in producing a quote that cause prospects to drop out, and numerous inaccurate credit reports. The Six Sigma methodology includes powerful tools for analyzing each of those gaps and quantifying what that poor quality is costing the company in each case.

Prioritize improvement projects. Once you clearly understand what each process gap is costing you, you can prioritize your improvement efforts according to what is most critical to you – customer service, time, money, perceived value, and other criteria. Because improvement in any organization proceeds project by project, you must be sure that you are investing your effort in the right projects in the right order.

Above all, you must continue to look at your business through the eyes of the customer. It is possible – and pointless – to redesign your internal processes and never touch the real needs of the customer. That doesn't mean remaking your processes with the customer only in mind. You must also remember the voice of the stakeholder and make sure that your customer-pleasing processes also meet the critical needs of your business. Six Sigma provides a powerful means for keeping those sometimes competing voices in perfect harmony.

Wireless handset case

Beyond Remediating Defects to Fulfilling Business Needs

If Six Sigma isn't just for manufacturing anymore, it isn't just for remediating defects either. It can also be applied proactively to fulfill a pressing business need. The wireless telephone business provides a case in point. Although the business has grown phenomenally over the past six years, it is now maturing. To maintain profitable growth it has become increasingly necessary to acquire high-value customers as cost-effectively as possible. To maintain its competitive edge, a regional telephone company decided to try to slash its Cost per Gross Add (CPGA) of a new wireless customer.

Through process mapping of the entire sales cycle, a Six Sigma team determined that the greatest opportunity for reducing CPGA lay in the costs of upgrading and replacing customers' malfunctioning handsets (Figure 1). The team zeroed in on the upgrade and exchange process, uncovering key areas where problems were likely to increase costs in returns and exchanges (Figure 2). It was at this point that the team applied such Six Sigma methodologies as Pareto analysis to identify process capabilities and develop a program for improvement. The team broke return/exchanges into three classes based on whether the return occurred less than 30 days after the sale, more than 30 days to a year, and more than a year, which allowed them to pinpoint improvements in each of these circumstances.

The improvements included working more closely with the handset manufacturer, working with retailers to improve their internal processes, insisting on compliance with return/exchange policy, automating some key processes to eliminate errors, and re-educating customers on how best to handle issues with handsets. As a result of these efforts, the team drove out over \$236,500 in expenses annually.

High Level Sales Process Map

Figure 1: *Process mapping uncovers upgrade as site of greatest business pain.*

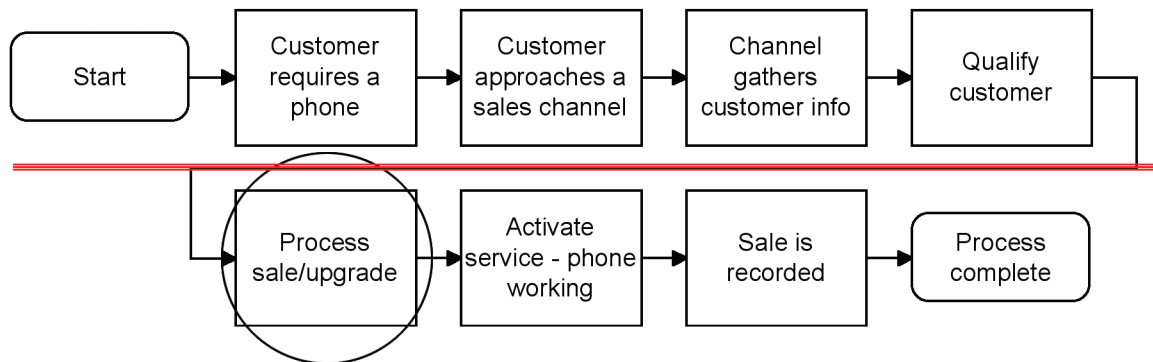
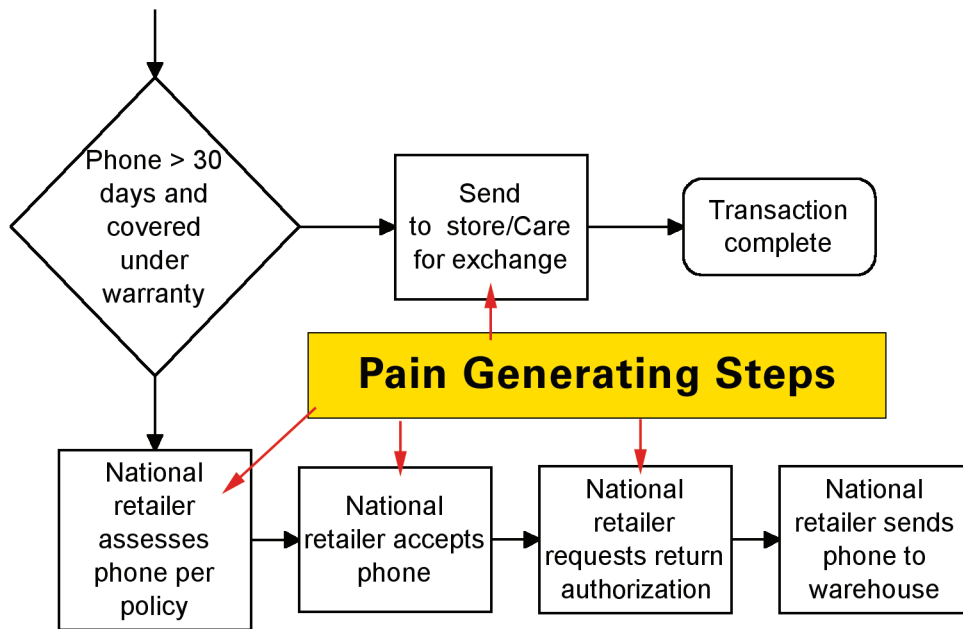


Figure 2: *Drilling down into the handset return/exchange process.*





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