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Six Sigma Implementation in Ford Company

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Abstract: This paper introduces concerning the implementation of six sigma and the way the Ford Motor Company used Six sigma to rework its processes and attain its success. Six sigma (6σ) may be a set of techniques and tools for method improvement. It provides a thought concerning what's six sigma and what's the necessity for implementing it within the explicit company and the way the changes occur within the company when the implementation of the actual technology. It seeks to boost the standard of the output of a method by distinguishing and removing the causes of defects and minimizing variability in producing and business processes. It uses a collection of quality management strategies, in the main empirical, applied math strategies, and creates a special infrastructure of individuals inside the organization World Health Organization are consultants in these strategies. every Six sigma project allotted inside a corporation follows an outlined sequence of steps and has specific worth targets, for example: scale back method cycle time, scale back pollution, scale back prices, increase client satisfaction, and increase profits. Ford's use of Six sigma methodology, whereas it did give some road bumps, enabled them to eliminate quite $2.19 billion in waste over the last decade. They resolved this drawback by applying Lean Six sigma techniques, like a data-driven problem-solving method, to plot solutions to waste problems.

Introduction

The Ford Motor Company is one amongst America's, and therefore the worlds, largest and most made automakers. Named when its founder industrialist, the corporate is thought for its innovative and dynamic approach to producing. Ford was a visionary man. He saw the requirement of breaking down complicated tasks into less complicated procedures, victimizationspecialized tools, and interchangeable elements. Whereas Ford's line was a revolutionary action, his work grew from solid concepts, with an eye fixed for continuous improvement. Ford checked out established modes and skin them down into their core parts, before building them copy once more. He strove to require existing processes and perpetually create them a lot of useful, efficient, and effective. There have been several benefits to Ford's concepts. Namely, the many decrease in prices of production, radically simplifying the labor method and reducing needed the work force.

Their aim was to cut back their defect rate to solely one defect per each fourteen.8 vehicles, and that they succeeded. The factors that forces Ford to implement six sigma were exaggerated value of production, qualityimprovement, and poor client satisfaction rates and for lowering environmental impact. Even thoughthroughoutthese successes bound obstacles Janus-faced by them were worker commitment, Time, money,productivity and knowledge desires.

Literature Review

Munro (2000) in his report talks concerning the implementation of six sigma in automotive industries. Automobile makers are the perfect candidates to profit from sixsigma quality improvement methodology. Orienting getting choices with the customer's sixsigma needs helped region create an improved getting call. The machinery it no inheritable reduced load/unload time, reduced cycle time, reduced scrap rates, and semiconductor diode to error-free loading. Choosing machinery that meets client sixsigma performance standards has helped region double its output whereas maintaining a high level of product quality. for example, Ford Motor Company promoted the philosophy "Quality is job one," within the Eighties, these days they need incontestable that creating product quality a high priority is quite simply a locution, it's important to the organization's operations and long growth. Ford created a top quality equals gain equation stating that rising quality will increase client satisfaction that results in a rise in client loyalty. For automotive trade six sigma have larger success wherever as QS-9000 appearance a lot of at the horizontal level of organization quality with quality coming up with and drawback determination?

Raisinghani (2005) provides associate degree account of the conception, tools within the application of six sigma. The immediate goal of six sigma is defect reduction. Reduced defects result in yield improvement; higher yields improve client satisfaction. Six sigma defect reduction is meant to steer to value reduction. It a method focus and aims to focus on method improvement opportunities through systematic measuring. Six sigma implementation will have negative consequences if applied within the wrong project. Six sigma may be a toolset, not a management system and is best employed in conjunction with alternative a lot of comprehensive quality standards like the Baldrige Criteria for Performance Excellence or the European Quality Award. Analysis limitations/implications. It's supported utilizing an in depth set of applied math and advanced mathematical tools, and a well-defined methodology that produces important results quickly. The success of this technique inside a corporation has important momentum that may solely result in elementary structure cultural transformation.

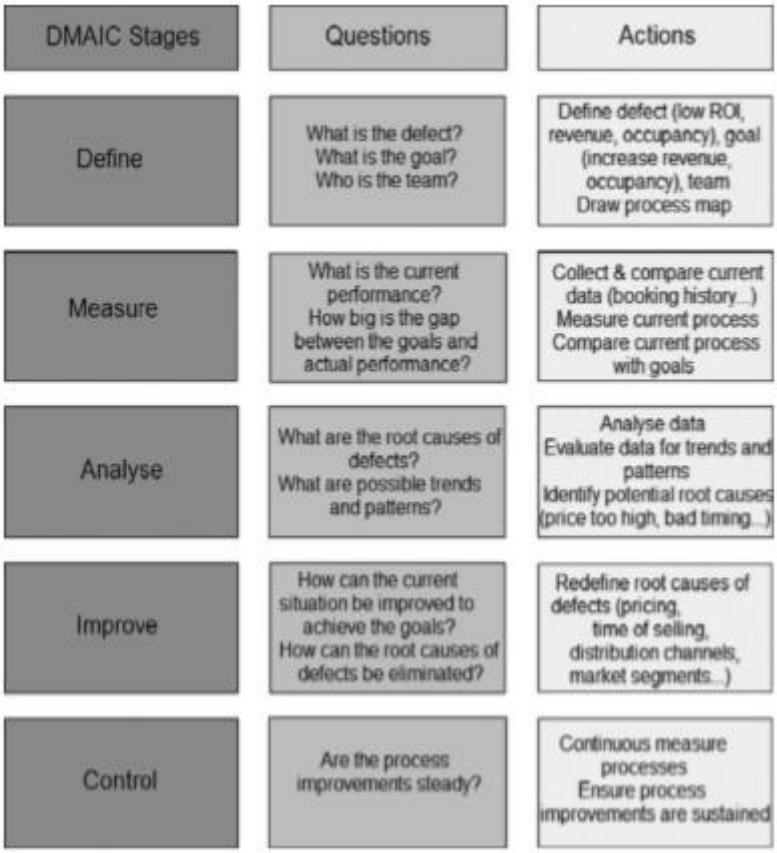
Coronado (2002) tells North American country concerning the vital success factors for made implementation of six sigma. Bound factors are answerable for made six sigma implementation in trade. These embrace Management involvement and commitment, Cultural amendment that more deals with factors like Technical, Political, Individual, structure factors, Then followed by Organization infrastructure, Communication with within the organization, correct coaching for staffs, Project prioritization and choice, Linking of six sigma to numerous areas like Business strategy, Customers, Suppliers etc. several organizations have according important advantages as a results of six sigma project implementation, although not all are however success stories.

Aboelmagad (2009) reports concerning the rising aspects and trends of six sigma implementation in trade. Six sigma analysis is growing apace, covering numerous disciplines and domains with a good target sixsigma tools and techniques; inquiry is dominant with a lot of stress on case study approach; and therefore the growing gap between producing- and service-focused articles implies the come of sixsigma to manufacturing as its initial base. The review has determined that sixsigma analysis is empirical in nature that reinforces the utilization of real-world knowledge. Case study was the dominant approach in Six sigma analysis and this is often could also be owing to the actual fact that quality issues in producing and repair contexts are sometimes treated as a case in terms of documentation and analysis. Additionally, the dearth of implementing sixsigma tools and methodologies across a good vary of processes or organizations makes the utilization of survey approach impractical. One amongst the foremost significant findings from our analysis has been the good empirical target sixsigma tools and techniques. There's little area for elucidative the confusion within the literature on what constitutes Six sigma theory and the way will it integrate with alternative improvement methods. We might argue that theoretical development is important to the event of sixsigma studies.

Asis,Osada(2010) provides North American country associate degree insight into the implementation of six sigma in management. The Six sigma initiative includes a comprehensive impact on its driver, enabler, and performance cluster, like directional the organization manner, enhancing the effectiveness of strategic project management, establishing a culture of data-driven approach, sharpening the thanks to develop leader, and so on. Six sigma has defined 2 sorts of comes that are DMAIC comes for providing corrective action to existing product, services, and business processes and DFSS project for making new worth that provides a lot of radical approach. Additionally to existing CSFs, it's been found that the linking or relationships among factors have compete a serious role in made sixsigma initiatives. Then, the strength of sixsigma has been delineate through causative relationships diagram by victimization American state principle. The diagram discusses the dynamics relationships of sixsigma in yielding financial benefits and establishing organization cultural values. These aspects are important for innovation in management system on cope with people's resistance through eager early parent to pioneer the readying of sixsigma. As a result, made initial comes facilitate to clarify for others the $64000 business worth of Six sigma.

Hunold(2013) in her article tells North American country concerning the implementation of six sigma in Revenue management. Every day, revenue managers got to create choices if to simply accept or reject a cope with a possible client and {for that} value providing a service to whom and through which marketing. Whereas creating these choices, they target increasing revenue inside associate degree organization. Applying sixsigma to revenue management may facilitate to form right choices concerning rating associate degreed distributing services inside an organization whereas increasing revenue and utilizing capability.

Application of six sigma method to revenue management



Vasilash (2008) had done his analysis on the standard of Ford Company. Per his analysis he found that they adopt their quality initial by taking client count, so no wastage is occurred, less inventory. They uses virtual quality producing method for producing. They encourages quick feedback. one amongst the ways in which they're doing this is often through the implementation of robots wielding lasers—no, not lasers a la James Bond in Goldfinger, however rather lasers that live} used as extremely precise sources of digital data that may be wont to exactly measure things just like the match between 2 items of sheet on the outside of a vehicle. "Ford's robotic optical device technology provides North American country a degree of preciseness like ne'er before. The vision technologies verify the dimension of interfaces on the vehicle's body in an exceedingly extremely correct manner, to a tenth of a metric linear unit," says West Chadic Ketelhut, chief engineer, Body Construction Engineering.

Sandholm, Sorquist (2002) in their analysis papers give insights on the key needs for 6 sigma success that are as follows : Management commitment and visual support, Treatment of six sigma as a holistic conception, Investment of adequate resources, target results, client orientation, target coaching and its contents, diversifications to organizations scenario and wishes, Prioritization and choice of comes, Development of uniform language and nomenclature, Development of strategy to introduce six sigma, Follow up and communication of success stories, Responsiveness to external influences.

Holtz,Campbell (2003) tells North American country concerning the implementation of sixsigma in Ford facility management. On philosophy and therefore the SS steps ar primarily a similar and each have developed from a similar root – the Japanese TQM practices and continue to focus on that the advance method from SS – the DMAIC method, are often considered a brief version of the standard Story, that was developed in Japan within the Nineteen Sixties as a customary for QC-circle shows. Holtz and mythologist (2003) state that the SS methodology has each plan of action and strategic applications. Tactically, SS may be a powerful tool for rising just about any method not activity to the specified level. victimization extremely trained people within the tools and principles of SS, organizations will focus resources on underperforming processes to attain high-leverage

Jacobsen (2011) focuses on the usage of six sigma within the reduction of value whereas rising environmental impact in Ford Company. Usage of DMAIC technique for quality improvement. Once the solutions were enforced, the team achieved each project goal and even exceeded the expected value reductionby a half million dollars annually. A lot of specifically, in meeting these goals, the basecoat paint consumption born from four.18 kg/unit to a mean consumption of three.3 kg/unit. Additionally to the tangible advantages, the project conjointly delivered spectacular intangibles, together with the implementation of an observance system that has a full summary of processes and improved morale among maintenance employees as a result of job enrichment.

Findings And Suggestions

Six sigma implementation is required for Ford Company owing to the subsequent reasons that include;

- Cost reduction. Ford's recent production method was amazingly expensive. By introducing sixsigma, they were not victimization resources that weren't necessary.
- Improving quality. Ford has perpetually been illustrious for his or her quality product, however event heir standards slip from time to time. While, for many firms, a mere ninety nine quality level is taken into account acceptable, this lets through a stunning quantity of defect. The maximum amount as 20,000 instances of defect. Six sigmaespouses that solely 99.99966% (and up) is right. This share limits the amount of defects per million to merely seven intrinsically, Ford created some nice astonishing strides in quality improvement victimization Six sigma.
- Poor client satisfaction rates. Satisfying client demand is as important to success as leverage it. Several of those problems link to 1 another, as multiple instances of defect are doubtless to feature up to a defective product. This can inevitably displease the client that is why Ford selected to implement sixsigma, to contour their processes, and improve production problems. All of that adds up to a lot of productive company and happier customers.
- Lowering environmental impact by reducing solvent consumption. Six sigma is a particularly inexperienced philosophy, and Ford uses it to form some nice changes in their environmental awareness. Ford's consumption of significant resources verified terribly expensive within the long. However by committing to an inexperienced work culture with sixsigma, they reduced prices, exaggerated quality, and improved client satisfaction.

Despite its success, there have been many obstacles within the manner of Ford's sixsigma implementation. These are:

- Employee commitment. As is commonly the case, several staff at Ford, together with commanding and senior management, at first viewed sixsigma with skepticism. This meant a scarcity of commitment was gift from the start, proving a serious reason behind concern for Ford's sixsigma implementation. The time constraints, on prime of this, created it tough to place its 350 prime leaders through weeks of coaching.
- Time, Money, Productivity. What is more, together with a scarcity of commitment, key resources like time and cash meant worker coaching was usually tough. The dearth of commitment conjointly semiconductor diode to a scarcity of productivity.
- Data desires. Finally, Ford was unaccustomed sixsigma and poorly equipped to follow through with its sixsigma initiative. Six Sigma, of course, depends on huge amounts of information to the current meant that Ford required to form and implement new measuring systems to tackle the requirements of Six sigma. Solely then was it ready to give any nice profit for the corporate.

Conclusion

After the implementation of six sigma in Ford Company, Ford's use of sixsigma methodology, whereas it did give some road bumps, enabled them to eliminate quite $2.19 billion in waste over the last decade. They resolved this drawback by applying Lean Six sigma techniques, like a data-driven problem-solving method, to plot solutions to waste problems. Moreover, the company's methodologies for quality improvement and waste elimination saw a staggering impact on the company's operations. Ford's Consumer-driven Six sigma has saved them over a billion bucks worldwide, serving to complete virtually 10,000 improvement comes since the first 2000s. Concerning client satisfaction, Ford managed to extend their share by 5 points. We have a tendency to might go as so much on say that sixsigma saved Ford from its established issues. These problems embrace inadequate productivity, poor use of resources, low client satisfaction, and environmental unfriendliness

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