SIX SIGMA IN EDUCATION

A CASE STUDY OF DESIGNING, DEPLOYING & DRIVING 'E-SIX SIGMA' AS A BUSINESS USING SIX SIGMA METHODOLOGY

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E-SIX SIGMA

a venture of sAvh Quality Solutions (Pune)

Index

Introduction

Six Sigma is world-wide renowned quality improvement methodology that mainly works on removing defects from the products, services and the processes across the sectors.

It was invented in 1980's at Motorola company. In its initial application, Six Sigma was limited to Manufacturing & Production industries however with its increasing popularity, it spread to all other sectors.

Today, Six Sigma is considered one of the prominent methods for Quality Management and being used by over 90% of Fortune 500 companies. Almost all National and Multi-National companies use Six Sigma in some or the other way.

Six Sigma has 4 key levels of expertise identified as-

Six Sigma Yellow Belt
Six Sigma Green Belt
Six Sigma Black Belt
Six Sigma Master Black Belt

Every level of expertise has its own roles & responsibilities in Six Sigma Project Implementation and generally lead by a Master Black Belt.

When integrated with Lean, which is, in simple words, a waste removal method, Six Sigma becomes Lean Six Sigma.

e-Six Sigma (www.esixsigma.in)

e-Six Sigma is a cloud-based Six Sigma Training & Certification Platform accredited by 'Council for Six Sigma Certification (USA)'. CSSC operates in over 165 countries across the world.

It has won a National Award for 'Best Online Six Sigma Training & Certification Platform in India 2017' by India Education Awards.

e-Six Sigma is being loved for its unique value of providing 'practical knowledge' through AWYL i.e. 'Apply What You Learn' activities which are meant to free your hands on the key topics being taught in the chapter (the curriculum for Six Sigma Green Belt is divided into 14 distinct chapters).

It is a brand of sAvh Quality Solutions, a sister concern of sAvh Technologies Pvt Ltd, an ISO 9001-2008 certified company based in Pune. sAvh is a venture by IIM-Alumnus & Ex-Infosys Employee.

sAvh has trained over 1800 students and professionals for Six Sigma Training.

Six Sigma and Education Industry

Quality of education became an important issue due to ever increasing demand by its stakeholders and competitive environment. Although Six Sigma has been successfully used in product and service improvement in the business environment, the concept has not been adapted in the Education Industry. To improve understanding of how Six Sigma can be used for Educational Institutes, we must gain the insights of how exactly the education system works.

Education System can be broken into three key areas:

1. Administration: The education system is held together by processes that must run smoothly and interact efficiently. Six Sigma principles can reduce the variance in these vital processes: admissions, information technology, certification, grant administration, repair and maintenance and purchase order administration.

2. *Enrollment:* Before education can take place, students have to be registered and placed in a classroom (Physical or Virtual). Six Sigma is suited to tackle one of the greatest inconveniences in the educational process- the time to complete enrollment process. Streamlining the enrollment process can lead to greater student satisfaction from the very start.

3. *Academics:* Six Sigma can play an active part in increasing the dedication in a student's mind. From creating a process, to choosing the right faculty members, to using benchmarking to identify and implement the best practices of other institutions, Six Sigma methodology can transform the quality of teaching & its delivery and thus the learning outcomes.

We also need to understand who are the customers of this system apart from the students. The list includes the parents, the community, the institutions, the government, the departments within the institutions that interacts with each other and many more.

With this very diverse list of customers, how we can meet their requirements. Do we just carry on as usual and hope that somehow things will work out, or do we pay attention to the changing needs of the society and adjust education accordingly? If we are not able to meet the needs of the customer, then we are not adding value to the educational system and therefore we are creating waste.

The waste or defect or error within the system includes Institute's Goal Misalignment, Incorrect Assignment, Old or Not up-to-date Curriculum, Variations in Teaching, Treating All Students Equal though their individual style of learning & grasping is totally different, etc.

Six Sigma can help improve the processes that make up the field of Education. As parents, students, governments and global economic conditions continue to place more pressure on improving education, educational institutions may rely much more heavily on Six Sigma methodology to deliver the best possible inputs resulting into the best possible learning outcomes for brighter future of humanity.

Case Study: Designing, Deploying & Driving 'e-Six Sigma' as a Business

e-Six Sigma, an EdTech venture based in Pune, that offers Cloud-based Six Sigma Training & Certifications to Six Sigma Aspirants from all corners of the world, used Six Sigma Methodology for designing, deploying & driving it as a business. In simple words, e-Six Sigma not only offers Six Sigma Training Programs but also set an example by successfully applying it to all the aspects of its own business.

Six Sigma used D-M-A-D-V Methodology specifically for starting new project or venture as:

- Define: Defining the needs of the customers or business
- Measure: Identify & Measure the CTQs i.e. Critical to Quality Characteristics
- Analyse: Analyze for the alternatives to be finalized
- Design: Choose the best available alternative for designing the process
- Verify: Run the pilot testing for the chosen alternative for process confirmation

e-Six Sigma used it successfully to achieve its goal of launching a cloud-based platform to offer different Six Sigma Training Programs with the best learning experience at the most challenging pricing. Currently, e-Six Sigma is one of the most loved learning partners for thousands of aspirants for Six Sigma across India and the other parts of the world.

Let's see how e-Six Sigma used Six Sigma at different phases of their business as below:

- **Designing Business Process**

e-Six Sigma was founded by an IIM-Alumnus & Ex-Infosys SME who always strives for the 'Perfection'. He wanted to reflect his philosophy into this venture.

e-Six Sigma started its journey from a concept alike many other training/ learning programs, wondering why there can't be a comprehensive Six Sigma Programs. The team of e-Six Sigma was pretty experienced in conducting classroom trainings for over 10 years before shifting to 'Cloud'.

It designed a survey to collect the opinions, views & feedbacks from different sample groups before starting the designing of their e-learning platform. e-Six Sigma used VOC i.e. Voice of Customers tool to conduct these surveys.

The data collected through these surveys was consolidated, analysed and further interpreted as an assertive outcome to go with the proposed platform to host different Six Sigma Programs.

e-Six Sigma Team was very keen about keeping the investment, not only monetary but in terms of time, efforts, resources, etc, as minimum as possible. It is the core of Six Sigma i.e. Minimum Resources & Maximum Outputs.

The first phase also included designing of training content such as e-learning videos & material, assessment system and complete training delivery model.

e-Six Sigma used Value-Stream Mapping and RPN (Risk Priority Number)- two very useful Six Sigma Tools to categorized & prioritize the CTQs while designing the product/ process. SWOT Analysis helped to analyse the competition and choose the best vendor to develop the software platform to host different courses.

In case of Content Designing for different courses, e-Six Sigma used Brainstorming Method, called as 6-3-5. Also, it adopted agile technique while designing the content to ensure the developed content was tested & verified before moving further and the defects (Time Duration between two Visual Frames, A-V Synchronization, Grammar, Text Animation Effect Duration, etc) were fixed at the time of their source itself.

This systematic & scientific approach helped e-Six Sigma save over 1000 man-hours and over INR 12 Lacs in funds. The designing phase completed within 7.5 months against estimated 13 months.

- **Deployment**

After the successful first phase of Research & Designing of the platform & the courses, the next phase was to deploy them on the server for alpha, beta testing followed by real-time usage by the actual end-consumers.

This phase was a bit challenging where the team needed to use Six Sigma with IT Infrastructure. The Senior Developer & PTH (Project Technical Head) was a Certified-Six Sigma Professional and thus the responsibility was handled quite efficiently by him.

The key challenge was to calibrate the performance of the platform. Thus, PTH decided to use one of the trickiest tools of Six Sigma i.e. MSA- Measurement System Analysis. It was like a Project within a Project. Took little over 2 months, MSA was successfully placed and hence the platform.

The results shown by alpha, beta testing rounds were amazing and beyond our expectations. The total number of defects identified were 784, of which only 7% were technical and were fixed within a stipulated time-frame of a week.

e-Six Sigma Users reported ZERO defect in its almost 13 months of deployment since January 2017 which was really commendable result of Six Sigma!

- **Driving/ Operations**

e-Six Sigma strongly believes & make sure to deliver completely hassle-free learning experience to its trainees. To achieve and maintain this goal, perhaps responsibility, it has developed a guide-lines for the officials on how to handle the complete learning cycle.

With the help of varied Six Sigma Techniques such as Five S, VOC, Run-Charts, Quality Circles, Kaizen, etc, the support team has been continuously working to ensure no defect is reached or disturb the learner.

e-Six Sigma established a strong example itself for its audience to learn Six Sigma with them.

Application of Six Sigma in Education Industry

The application of Six Sigma in Education Industry primarily involves a strong focus of improving processes by reducing/ eliminating defects/ errors/ waste instead of cutting cost by reducing budgets. This is the key solution to transform the processes into the efficient ones.

This requires an understanding of the following:

- **Focus on the Customers**
  Helping each area of the institution to understand the value of their service. This concept is fundamental to Six Sigma as without an understanding of needs and requirements of internal and external customers, the service provided is non-value added.

- **Data-driven Management**
  Individuals in educational institutions need to change the way they look at and manage data. In general, the data that is collected is used for reporting to the state, government, but is not used to run the institution. With Six Sigma, every individual or group will need to be close to a measurement so that they will be able to improve their own performance.

- **Focus on Process Improvement**
  This concept is fundamental to Six Sigma, without being able to identify and define processes, they cannot improve. The thinking needs to move from one of individual blame to one of looking at the process and where things went wrong. It has been observed that constructing process maps and identifying measures become the major starting point for educational institutions. Defining processes ensure that the process is visible and therefore something that can be understood and managed.

- **Proactive Management**
  It requires the total institution getting out of the mind-sets of finding excuses to problems, errors and mistakes. Instead everyone needs to move in the direction of prevention- this is a new way of thinking.

- **Constant and continuous drive for perfection**
  Building the mind-sets of dissatisfaction with the status quo and the need to be dedicated to a culture of continuous improvement.

In education as in other industries it is found that there are no clear process boundaries and that the institutions have a very strong functional silo structure.

This is the major stumbling block for implementing process improvement. Do we stop here and say that making improvements is not possible? No. We begin by helping individuals to understand and define processes and to identify pain points associated with the process.

Training & Mentoring by e-Six Sigma

e-Six Sigma offers Six Sigma Training & Certification Programs accredited by 'Council for Six Sigma Certification (USA)'. It is one of the renowned Accreditation Providers across the world that operates in over 165 countries.

e-Six Sigma is a venture by IIM-Alumnus & Ex-Infosys Employee that won a National Award in Feb 2017 by India Education Awards.

It provides state-of-the-art Virtual Infrastructure and Curriculum to learn Six Sigma at your convenience & pace to earn Globally Trusted Certification with life-time validity and Cross-Industry Applicability.

The main reason why our learners chose 'e-Six Sigma' over others, is that, we offer Practical Exposure through our Mandatory AWYL i.e. Apply What You Learn Activities and use of Real-life Examples for easy understanding.

With an extensive knowledge & experience of almost a decade in Training & Consulting, we partner with Academic Institutes, Corporates, Government Bodies & Individuals to gratify their respective Goals by empowering the way they perform.

You can learn more about its Training & Mentoring Programs at- www.eSixSigma.in.

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