

CASE STUDY

Implementing Quality Management in the Textile Industry in Pakistan



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by

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1. INTRODUCTION

Generally, there are two types of set-ups of textile manufacturing plants in Pakistan.

- a) **Composite Textile Plants:** These types of plants were basically installed till late 1950's in Pakistan. They comprise of number of yarn manufacturing plants, weaving plants, dyeing plants, made-ups etc at one location.
- b) **Individual Plants:** Due to reasons like government incentives, labour issues, and other comparative advantages, installation of individual spinning and weaving plants became more feasible. Today the textile industry is mainly consisting of these types of individual spinning, weaving, knitting, dyeing and stitching units (plants) in Pakistan. The production capacities of these plants are normally in the following range:

- Spinning Plants (with installed capacity of 12500 to 25000 spindles)
- Weaving Plants (with installed capacity of 72 Looms to 102 Looms)
- Knitting Plants (with installed capacity of 10 tons to 20 tons per day)
- Dyeing Plants (with installed capacity of 10 tons to 20 tons per day)

The textile industry in Pakistan is mainly owned by number of big groups. Statistics shows that about 75 percent of the textile plants in Pakistan are owned by 25 percent of the big group like Sapphire group, Kohinoor Maple Leaf Group; Gulistan Group, Crescent Group, Ibrahim Group, Master Group, Ilahi Group, Ayesha Group, Chakwal Textile etc.

Sapphire is one of the largest textile groups in Pakistan. It owns 20 plants and all of these plants are independent individual units. Sapphire's head offices are located in Karachi and Lahore. Some of the centralized activities like marketing, purchase and raw material procurement are controlled through head offices. Sapphire was founded in 1969 aiming to produce quality yarn of different counts. In pursuance of the vertical integration policy, Sapphire went into the projects for producing Woven Fabrics, Knitted Fabrics, Yarn Cone Dyeing, Knitted Bleached and Dyed Fabrics.

Being export oriented company Sapphire believes in timely deliveries which is one of the most critical parameters. Therefore, to meet the deadlines effectively and have cheaper source of electricity Sapphires' Power Plants were established at its industrial locations, to provide in-

house consumption. These facilities were expanded to neighboring industries by having a transmission like network.

- The total production capacity from 4 Power Generation Plants is 30 MW
- Eleven Yarn Spinning Plants have a production capability of 60,000 tons of yarn/year
- Two Weaving Plants have a production capability of 20 million meters of fabric/year
- One Yarn Dyeing with dyeing capability of 10 tons per day
- Present production capacity for Knitted Fabrics is 10 tons per day
- Knitted Fabric Dyeing plant has a production capability of 10 tons per day

2. WELL BEGUN IN HALF DONE

ISO 9000 Quality Management System (QMS) is a good starting point towards Total Quality Management for the organization in less developed countries. It is also an advance management tool for managing businesses effectively for 20th century and ensuring customers to deliver consistent product & service quality particularly in global markets. Other management tools like ISO 14000 Environment Management System (EMS), Occupational Health & Safety Standards, Product Certification Standards, CE Marking have also joined the race of Quality Management.

It is of utmost important for the organization to adapt the best possible approach to meet the future requirements in the field of Quality Management. Different approaches have been adopted by the Pakistani organizations in textile segment for the quality management system development in compliance with ISO 9001/2. It is very important for the Executive Management to select the best possible approach for their organization. The poor judgement in this era may lead the organization to develop an inefficient system and add cost to their product. Merits and demerits of some of the approaches adopted by Pakistani textile organizations are highlighted below:

2.1 APPROACH 1: SYSTEM DEVELOPMENT BY A SELECTED EMPLOYEE

Initially textile groups adopted this approach. They selected one person from the organization and start sending him on external training courses. The expectations from this person were not only to develop Quality Management System himself but also to bring some sort of cultural changes in the organization. In some cases the responsibility of this person was extended to deal with number of plants at a time. Most of the textile groups later on changed their approach and start running behind the consultants. The reason behind this change was poor judgement with the intensity of issue and the textile culture.

2.2 APPROACH 2: SYSTEM DEVELOPMENT THROUGH CONSULTANTS

Many textile groups have taken this approach as a quick fit for quality management system development. The most difficult part of this approach is the availability of industry specialized consultants with strong technical knowledge and professional background. Very few consultancy firms maintain this level. Therefore, selection of consultant organization is very important. Here, not only the credibility and previous experience of consultant organization but also the credibility and experience of system developer (junior consultant) deputed to your organization is important (All that glitters is not gold). Otherwise you may get ISO 9000 certificate quickly but may not bring any improvement in the organization.

To bring improvements is also heavily dependent on company's perception towards quality management system development. If the organization is only focusing on certification aspect then how improvement can be achieved?

2.3 APPROACH 3: SYSTEM DEVELOPMENT THROUGH HUMAN RESOURCE DEVELOPMENT

This is one of the best approaches particularly for textile industry of Pakistan.

In order to be cost effect and develop quality management system compatible with the organizational goals & objectives it is highly beneficial to deal quality management era at group level. It will enable the organization to:

- Harmonize the horizontal communication with in the group
- Highlight the operational strengths and weaknesses at different plants
- Establish a consistent system at all plants
- Be cost effective in the area of certification
- Reduce the systems development cost
- Make employees more comfortable to bring improvements

Both types of textile manufacturing set-ups (Composite units and individual units) have its own advantages and disadvantages. It is easier for a composite unit to establish an independent department headed by the selected person supported by a team. Who will guide and train the technical team through formal or informal training sessions. The task will be harder but not difficult.

On the other hand, it not feasible to set-up an independent department for each individual plant to develop Quality Management System at individual spinning, weaving, knitting, dyeing plant.

Therefore, to deal the Quality Management era at group level, it is highly recommended to establish Human Resource Development activity as a permanent part of the organization. It might be very hard in the prevailing conditions of textile industry in Pakistan to delegate all the responsibilities & authorities required to Human Resource Development Department. Therefore, establishment of a Quality Systems and H.R. Development department at group level and backed up with necessary resources can bring major cultural changes in the organization through systems development and training. This department can be made responsible Human Resource Development activities later on.

3. REASONS FOR ADOPTING ISO 9000 AT SAPPHIRE

Most of the textile industry in Pakistan is in export business like Sapphire and covers all major ports round the world. It is a matter of concern that very few textile companies are adopting ISO 9000 as a formal Quality Management System for improving their existing systems. Most of the companies are taking ISO 9000 certification as to ad new equipment to their facilities not as a quality management tool. Very few have realized that the certification alone can not attract the customers if it is not supported by internal improvements. What it might do is to add cost to their product and service in the form of certification and consultancy cost.

There may be different reasons for different companies to develop Quality Management System in line with ISO 9000. However, at Sapphire reasons, for adopting ISO 9000 in order of importance were as follows:

1. Improvement in existing Quality Management System
2. Improvement in production & servicing operations
3. Harmonizing Horizontal Communication at all levels in the group
4. Enhance competitive edge in global Market
5. Meeting customer's implied needs in Quality Management era

4. SAPPHIRE'S APPROACH TO QUALITY MANAGEMENT SYSTEM

Initially, the approach 1 was selected at Sapphire Group. As it was observed that it is very hard for a single person to provide assistance to all plants. The main reasons of failure of this approach were as follows:

- Lack of availability of an independent driving force
- Lack of availability of consistent and continuous guidance
- Cost of continuous training and company wide training at all plants
- Different perceptions on quality management system development after training
- Day to day operational difficulties while the technical team is on external training
- Resistance to spare technical team for external training

Due to above mentioned factors the Executive Management decided to go for second approach. But very soon the Executive as well as Technical Management at Sapphire started realizing that this approach will not be cost effective and beneficial in-terms of bringing desired change and improvements as per Sapphire's goals & objectives.

An infrastructure for an independent department was brainstormed. The expected requirements for were approved.

5. ROAD MAP TO QUALITY MANAGEMENT SYSTEM DEVELOPMENT AT SAPPHIRE

5.1 QUALITY ASSURANCE AND H.R. DEVELOPMENT

An independent department was established to develop Quality Assurance and Human Resources at group level. This department is directly reporting to the Sapphire's Executive Management. The Group General Manager along with this team is responsible to bring cultural change through systems development and H.R. Development.

5.2 TRAINING SET-UP

A centralized "Sapphire's Training Centre" in Lahore and Training Centres at plant locations have been developed and equipped with all necessary requirements. Continuous training programs are runs at these training centres. Six monthly and/or yearly training needs are identified, evaluated, approved and provided. For most of the training programs in-house trainers are utilized. However, if needed the trainers from reputable training organizations are also invited for in-house training.

5.3 TRAINING SYLLABUS DEVELOPMENT

A continuous effort to develop the training syllabus at Sapphire is exercised. Training syllabus in most of the areas are already developed.

For external training, appropriate persons are selected who later on act as internal trainers. The training material provided by the training body is utilized as a base to develop in-house training syllabus. This syllabus is customized to Sapphire's operation and approved by the designed persons prior to issuance for training e.g.

- Metrology Courses for Calibration
- Certified Lead Auditor training courses
- Maintenance & Productivity Improvement training courses
- Quality Management courses

5.4 TRAINING OF TRAINERS

In-house trainers are identified and selected based on their competency, interest, and requirements from all the operational areas. In order to develop the trainer's abilities and enhance their training capabilities trainers are trained. This feature enabled Sapphire to run the company wide training program in parallel.

5.5 DOCUMENTATION TEAMS AT EACH PLANT

Documentation teams comprises of 4-5 members at each plant were identified. After their comprehensive training, documentation teams were made responsible to evolve the draft QSPs, OPs, Standards, Schedules, Quality Plans and additional necessary Quality Records identified during gap analysis.

5.6 SET UP OF ISO 9000 OFFICES

ISO offices were established at plants. All necessary requirements including computers, printers, stationery, furniture etc. were provided. ISO offices were utilized during system development, documentation review and approval meetings. Technical people including Plant Heads as a team activity carry out documentation reviews. This enabled Sapphire's technical team to harmonize the internal customer concept. Each department became more aware about the quality requirements of receiving department.

5.6 CALIBRATION SET UP

Due to lack of calibration facilities available in the country and higher calibration cost, it was decided to tackle calibration matters as a centralized activity enabling Sapphire to minimize the calibration cost. The following list of calibrators enabled us to calibrate about 80% of weaving & 60% of spinning plant's inspection measuring & test equipment in-house.

Calibrators used for in-house calibration	Cost
Standard Masses total weight 61.05 Kg [50, 100, 200 (two), 500 gm, 1, 2 (two), 5, 10 (two), 20 Kg]	Rs. 43,500.00
Line length Standards (Two)	Rs. 14,000.00
Micro processor based temperature controller	Rs. 14,000.00
Thermo couple K-type	Rs. 1,200.00
Deer fryer	Rs. 4,000.00
Pneumatic pressure gauge	Rs. 7,500.00
Hydraulic pressure gauge	Rs. 1,800.00
Clamp meter, Multi meter, Hygrometer	Rs. 21,250.00

5.6 ISO 9000 CERTIFICATION COST

Sapphire's all plants went directly for to ISO 9002 final certification audits enabling Sapphire to reduce the certification cost. This was only happened due to greater confidence of trained technical team and employees at developed quality management system.

The cost of ISO 9000 certification incurred at Sapphire's plants is even much lesser as compared to other textile groups in Pakistan. Simple reason behind is that Sapphire dealt this area at group level rather than getting quotations for individual plants. Therefore, certification agencies quoted us very reasonable cost. Sapphire is bearing 5-6 US \$ per day per plant. As we know that Government of Pakistan has already announced an incentive of Rs. 200,000.00 per plant for three year for ISO 9000 certified firms. Therefore, after receiving this incentive which is about 3 US \$ per plant per day, the cost of ISO 9000 certification at Sapphire will become 2-3 US \$ per day per plant. ($\text{Rs. } 200,000 \div 60 \div 3 \div 365 = 3 \text{ US \$ per day}$)

Today, Sapphire's total five plants are certified to ISO 9002. Two of them under the guidance of a consultancy firm located in Sindh where as three of them under the guidance of Sapphire's QA-HRD in Punjab. Six other plants are ready and going through internal quality audits phase. The planned period for ISO 9002 final certification audit for these six plants is November-December 1998.

6. TANGIBLE AND INTANGIBLE ACHIEVEMENTS AT SAPPHIRE

The following intangible benefits have been reported by the technical management from Sapphire's ISO 9002 certified plants:

- Greater clarity in operational roles
- Higher sense of responsibility means what to do and what not to do
- Higher self discipline
- Better house keeping
- Greater employees satisfaction due to improved work environment
- Customer focused approach
- Smooth operation with lesser fire fighting

One should make him/herself clear that any quality management system

- Does not improve the product quality
- Does not improve the production
- Does not reduce the number of employees
- Does not improve the machine efficiency
- Does not reduce the rate of rejections

WHAT IT DOES ?

It improves the quality management practices thus ensuring consistency in product quality & services offered.

Now there is a big question mark regarding the tangible benefits after quality management system development at any company. Here the author of this paper wants to make it very clear that any tangible improvement/benefit through quality management system development is

totally dependent upon the inherent capability of above mention operations and the level attained in these operations. It is very easy to see intangible benefits where as to calculate the tangible benefits is equally difficult.

We at Sapphire selected one model plant named as Diamond Fabrics Ltd. (DFL) to observe the tangible benefits as a result of intangible achievements. Before sharing this experience the author of this paper who is the Group General Manager, Quality Assurance and H.R. Development at Sapphire wants to:

- Thanks the Executive Management of Sapphire for their true commitment in providing right resources at right time
- Recognize the effort made by Plant Head through his true spirit toward Quality Management and
- Recognize the whole technical team including foremen, operators and workers
Who made this possible to save PRs. 17.48 millions per year at DFL.

CONCLUSIONS

- Keep in mind well begun is half done
- Establish missing infrastructure in your group i.e. Quality Assurance & H.R. Development
- Install monitoring system to see results
- Compare all the costs with recognition & improvements, it might be a negligible amount
- Build strong foundation to meet quality management requirements for 21th century.