

KZN Clothing and Textile Cluster Manufacturing Competitiveness Newsletter

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After the successful completion of a 5-month pilot project, the KZN Clothing and Textile Cluster (KZN CTC) was formally established in August 2005. The KZN CTC is dedicated to facilitating firm-level upgrading in the KwaZulu-Natal clothing and textile manufacturing industries, with this commitment embraced within each of its three programmes: Manufacturing Competitiveness, Human Resource Development and Government Interface.

Manufacturing Competitiveness is one of the cornerstones of the KZN CTC with a focus on driving change through its benchmarking programme. In support of the benchmarking programme, and in an effort to propagate best practice knowledge throughout the regional clothing and textile industries, the manufacturing competitiveness programme incorporates a large array of information and knowledge sharing activities. One of these is the programme's quarterly best practice workshop series, which runs through 2005-7. Given the critical role that these workshops should play in empowering firms with knowledge to effect positive change within their own organisations, the KZN CTC considered it important to reflect on some of the main issues raised during these sessions and to incorporate them into a newsletter series that follows the content of the best practice workshops. As such, this, the second Manufacturing Competitiveness newsletter of the series, attempts to capture, and give voice to, some of the key findings arising out of the 2nd Best Practices workshop 'TQM in support of World Class Manufacturing: A case study of Webroy'.

Finally, the Newsletter also contains a short News Brief on the progress of the KZN CTC's Manufacturing Competitiveness programme, which will be included in all future newsletters to ensure members are fully up to date with regards to its progress.

If you have any queries regarding this newsletter, please email Ms. Jeanne Esselaar (Jeanne@bmanalysts.com). Enjoy the read!

Focus article..

Total Quality Management as a cornerstone of lean production

Introduction

The first Manufacturing Competitiveness newsletter of the KZN Clothing and Textile Cluster (KZN CTC) provided firms with an introduction to the philosophy of World Class Manufacturing. In that newsletter lean production was defined as the ability of a firm to delight its customers through just-in-time production, total quality management and continuous improvement. These three characteristics of lean production were highlighted as the cornerstones of World Class Manufacturing.

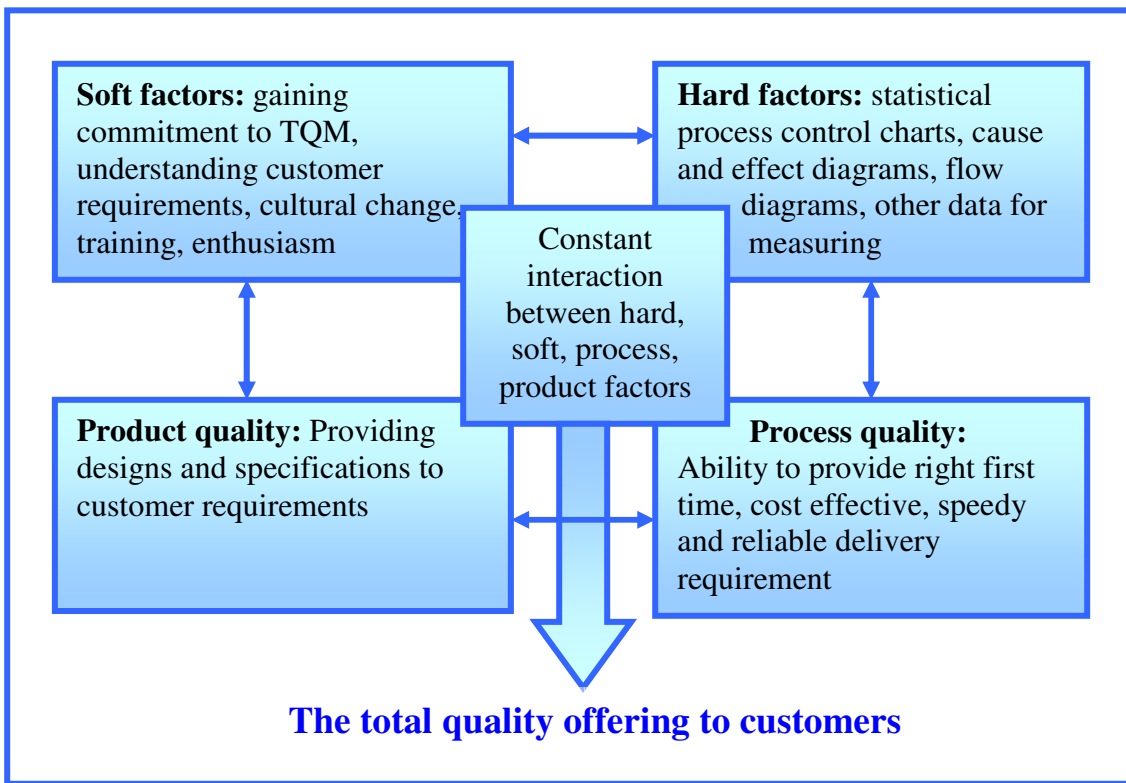
Team-based manufacturing as a facet of continuous improvement was the focus of the Manufacturing Competitiveness programme's first quarterly best practice workshop and hence the last newsletter. In keeping with the three cornerstones of lean production, the second quarterly best practice workshop focused on total quality management. However, by now it should be evident that separating just-in-time production, total quality management and continuous improvement from each other is near impossible. The workshop, hosted on the 19th of October at an automotive component manufacturer, Webroy, will have highlighted to firms that each of these facets of World Class Manufacturing are intertwined and that the success of one is highly dependent on the others. The implementation of World Class Manufacturing principles within any organisation does not simply involve implementing various programmes that are independent of each other; rather it involves changing the way that a firm does business. Just-in-time production, total quality management and continuous improvement are all elements of an overriding philosophy with each being inter-dependent on the others for its success or failure.

To ensure that important concepts and insights arising from the total quality management workshop at Webroy are not lost, this newsletter aims to capture some of the central elements of total quality management and its importance to lean production. The first section of this article therefore provides a detailed definition of total quality management, whilst the second section examines firms' adherence to total quality management by using data from B&M Analysts' clothing and automotive component manufacturers benchmarking database. Section 3 focuses on the implementation of total quality management, and Section 4 looks at Webroy as a case-study for implementing TQM, examining the lessons that can be learned from Webroy and other firms that have adopted a total quality management philosophy. A large amount of the content of this article is derived from Steve Brown's book entitled, "Manufacturing the Future: Strategic Resonance for Enlightened Manufacturing".

1. What is Total Quality Management (TQM)?

Steve Brown (2000) defines TQM as 'an integrative management philosophy aimed at continuously improving the quality of products and processes to achieve customer satisfaction by making quality a concern and responsibility for everyone in the business'. TQM redefines quality as meeting or exceeding customer requirements not only in terms of no quality failures, but also with respect to cost, delivery, product features, flexibility etc. As the diagram below illustrates, quality is therefore a comprehensive term that must include both process and product quality, as well as hard and soft factors. Although each of these has a specific focus, they are all still dependent on each other.

Figure 1: The four linkages in the scope of quality¹



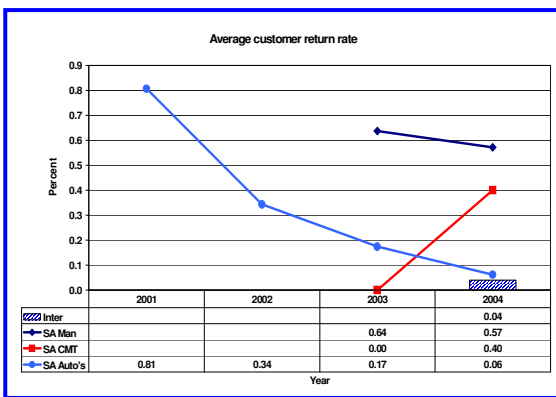
¹ Steve Brown (2000), "Manufacturing the Future: Strategic Resonance for Enlightened Manufacturing", p.119

Product quality involves providing customers with a product that meets customer designs and specifications. However, if the product is not supported by process enhancements e.g. delivery, speed, cost etc., it will still fail as a total quality product. Soft issues are also vital, as buy-in and understanding by workers is essential. If the culture of the organisation does not support quality, than any initiatives, no matter how good, will fail. Similarly, hard factors cannot be ignored because without accurate measurements no improvements can be noted.

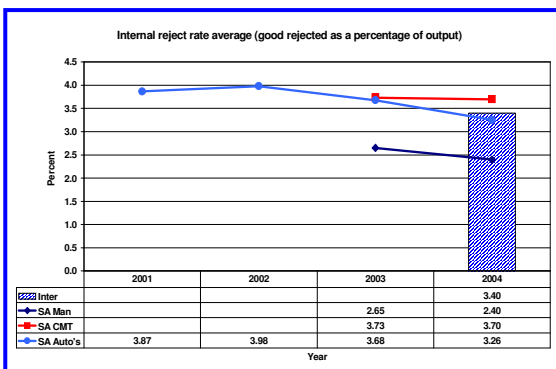
The emphasis of TQM should therefore be placed on the T - total, because quality must pervade every area of the firm. This involves not only all functions within the firm, but other key stakeholders as well. All aspects of the business include the firm's supply chain, and thus the total quality of supply; such as, product quality, speed, reliability, cost etc. also needs to become a focus area of the firm.

2. Evidence of TQM in SA Clothing and Textile Firms

The benchmarking of clothing and textile firms within SA has revealed limited adherence to TQM within firms. For example, very limited use of visual performance management to record performance and note improvements is evident; firms are still adhering to quality control rather than quality assurance principles; there is little or no evidence of teams on the shop floor; and the average number of suggestions received per employee amongst the SA clothing manufacturers (0.04) and SA CMT (0.2) firms is substantially less than the SA auto component manufacturers (1.23). In addition, internal and external quality performance data, presented below, amongst the clothing firms further supports this finding.



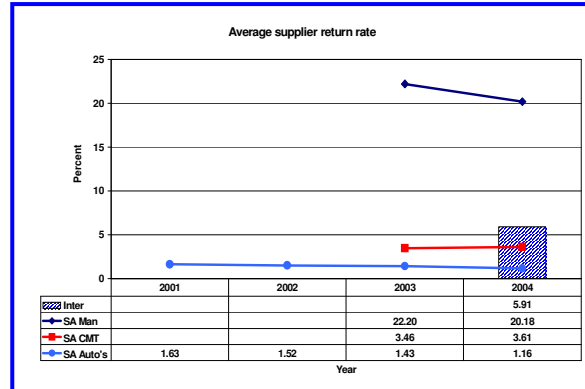
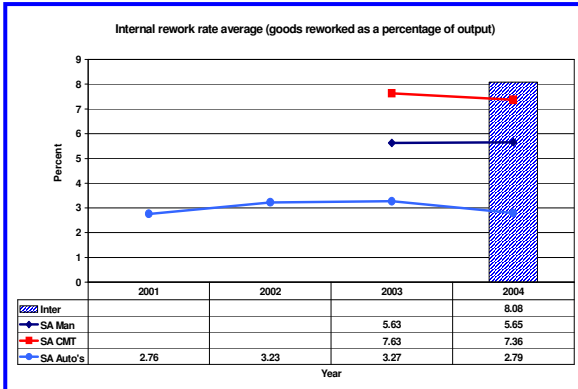
Drastic improvements in the SA automotive component firms' average customer return rate is evident in the figure below. There has been a 92.6% improvement in customer return rates between 2001 and 2004. In contrast, the 2004 average for SA CMT firms of 0.4% is nearly 7 times greater, and the SA clothing manufacturer average of 0.57% is nearly 10 times greater than the 0.06% average amongst the auto component firms.



With regards to internal reject rates, the SA auto component firms have again shown an improvement, with internal reject rates falling from 3.98% in 2002 to 3.26% in 2004 – an improvement of nearly 20%. The SA CMT firms are the weakest performers of the comparators with no progress evident. The average amongst these firms has remained fairly constant at around 3.7% during 2003 and 2004. Interestingly, the SA clothing manufacturer average is the strongest performer, with an internal reject rate of 2.65% in 2003, improving by 9% to 2.40% in

2004. However, given the comparatively high customer return rate amongst these firms,

the data seems to suggest that goods that do not meet customers' quality requirements are still leaving the factory.



Internal rework rates amongst SA CMT and clothing manufacturing firms are relatively high when compared to the SA auto component industry. During 2003 and 2004, the SA auto component firms' average internal rework rate was around 3%, compared to the SA clothing manufacturer average of 5.6% and the SA CMT average of approximately 7%. Similarly, average supplier return rates show weaker performance amongst the clothing firms when compared to the SA auto average. In 2004, the SA auto component firms recorded an average supplier return rate of 1.2%, compared to the 20.2% average recorded by the SA clothing manufacturers.

If one considers all four graphs presented here, the TQM challenge confronting SA clothing firms is more explicit. Quality performance is not only unsatisfactory in terms of customer requirements; it is coming at a huge cost to firms.

3. Implementing a TQM System

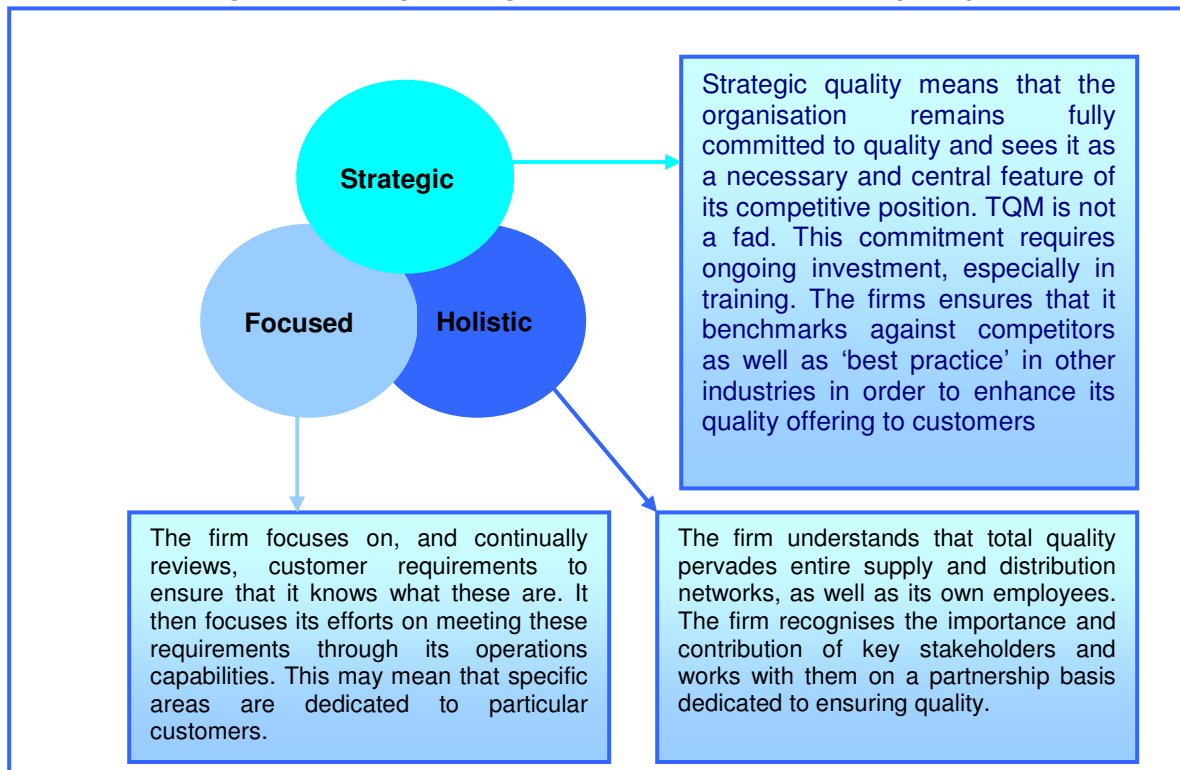
In this regard it is important to note that the main benefit of TQM is cost reduction. There is a cost to not doing things right first time every time, and therefore the introduction of a TQM system within a firm will result in a decrease in these costs over time, resulting in tangible benefits – including financial gain. However, TQM is difficult to maintain for one of two reasons. First, if success is achieved, then there is a temptation to sit back because it is believed that quality has been accomplished. Alternatively, if a firm does not achieve instant results, then there is a tendency to abandon TQM. The main problem is that TQM is not easy to instil, nor easy to remain committed to over the long term.

In order for TQM to be successful, Steve Brown believes that there are a number of key factors that need to be embraced by firms.

1. Top management commitment is essential. Managers have to set standards and lead by example, and managers have to remain committed to areas such as training. Without this commitment, quality will erode. Therefore, leadership from top management plays a critical role in TQM.
2. A continuous improvement culture within the organisation is vital. The kaizen approach (small, continuous improvement steps) to improvement has to be in place. Although individually each improvement may not appear to be of any significance, the combined total contribution of these incremental changes can be substantial.

3. All aspects of the business need to be involved in TQM i.e. all in-house employees at all levels of the firm must be committed to quality. However, all aspects of the business include not only internal aspects, but partners in the supply chain and other alliances as well.
4. Lastly, long-term commitment to TQM is critical. TQM cannot be considered to be a fad, or a separate programme. TQM is of strategic importance. As globalisation impacts fully on markets, the rate and intensity of competition will continue to increase. TQM fails in some firms because it is launched as a programme that has a start and end date attached to it. As a result, TQM will be unconnected to the business strategy – defined too rigidly and narrowly – and expected to bring about instant and miraculous transformation. In this instance, TQM will fail.

Figure 2: Being strategic, focused and holistic in quality²



TQM is not just a programme, but a way of operating. A strategic, focused and holistic view, as depicted in the figure above, needs to be at the centre of TQM. The biggest challenge is to see quality as a strategic issue, rather than as a quick-fix, cost cutting solution.

4. Webroy as a case study

At the KZN CTC's second quarterly best practice workshop on TQM hosted by Webroy, Webroy highlighted that their TQM system involves people, processes and suppliers. Webroy's approach to TQM therefore clearly supports the all-encompassing definition of TQM in the first section. Furthermore, at the workshop it became clear that the key factors

² Steve Brown (2000), "Manufacturing the future: Strategic resonance for enlightened manufacturing", p.139

required for a successful TQM system as identified by Steve Brown above were also all present at Webroy.

Research shows that TQM 'enlightened' plants:

- Remain committed to TQM
- Have frequent meetings for staff
- Annual suggestions per employee ranged from 17 to 27
- Involve at least 95% of their staff in quality circles or continuous improvement groups
- Remain committed to measuring quality
- Failure rate at final inspection ranged from 0.6% to 1.6% (compared to 3% to 5.8% at traditional plants)
- Are much more customer focused
- Show long-term commitment to quality which has become a central part of the language and culture within the plant
- Conduct ongoing and rigorous training, focusing on a number of key areas:
 - Prevention in quality
 - Ongoing commitment to co-workers being internal customers
 - Problem solving via continuous improvement initiatives
 - Empowerment of operators
 - Emphasis on simplicity in operations so that quality issues emerge and are dealt with quickly

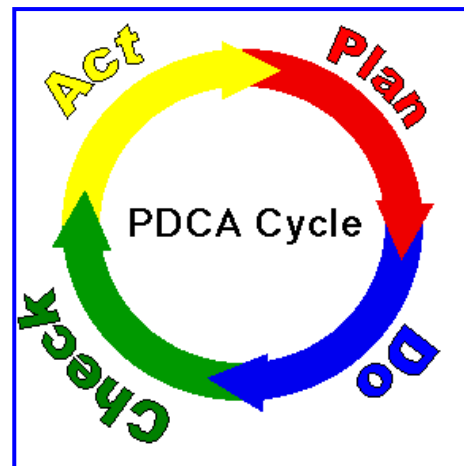
Source: Brown (2000)

The people aspect of Webroy's TQM system involved the empowerment of workers through the division of the firm into 12 mini-businesses. Each mini-business elected its own team leader, regular daily meetings are conducted, the goals of each mini-business are aligned with the company's goals, and visual performance management forms part of each mini-business. Webroy emphasised that visual performance management is key to the success of this approach. The people part of TQM at Webroy involves extensive training of employees with each employee receiving 2.5 hours of training per month. Goals/targets are also identified, for example, there is a target of 1 suggestion per employee per month and a target of 98% has been set for attendance levels. Furthermore, the company has a system of kaizen teams (multidisciplinary improvement teams), believes that the recognition

of workers from both management and peers is essential, and has changed its management style to 'serve the value adding operators'.

With regards to processes, Webroy started implementing just-in-time principles into their organisation in order to improve processes and thus quality. This involved:

- Decreasing work-in-progress levels
- Decreasing set-up and changeover times
- Reducing the number of processes required to manufacture a product
- Increasing flexibility to meet customer needs
- Introducing quality at source (here training is essential, but has allowed Webroy to change from a system of 8 quality inspectors to 2 quality auditors)
- Building quality into the process by improving processes so that they are not as operator sensitive
- Quality standards focussed around continuous improvement



- Conducting regular audits e.g. benchmarking, customer, system, business, product and process audits
- Introducing a kanban system that pulls production through the plant

Lastly, Webroy included a focus on suppliers as a way of improving total quality. Here the company communicates price and quality requirements to suppliers, introduced supplier agreements, delivery schedules, training of suppliers, visits to suppliers, supplier audits and a supplier improvement programme.

The case study of Webroy presented here and at the best practice workshop in October undoubtedly supports all of the theory that has been outlined in this article. However, there are three important observations that are worth noting that were clearly evident at the workshop, but that you will never be able to find on a piece of paper. These are:

1. Recognition of the challenge
2. State of mind
3. Energy to maintain

A very constructive point made by the company's Managing Director, Mr. Rob Royston, is that he firmly believes that if the company did not embark on this journey, they would not be here today.

Thank you note:

The second quarterly best practice workshop of the Manufacturing Competitiveness programme on TQM was a resounding success, with Mr. Rob Royston providing an excellent insight into Webroy's endeavours with regards to TQM and their pursuit of World Class Manufacturing. The feedback that we received from those in attendance was very positive. As such, on behalf of all KZN Clothing and Textile Cluster members, we would like to extend a warm thank you to Mr. Royston for his willingness to share his valuable insights.

Manufacturing Competitiveness News...

October and November progress report

The activities for the month of September ended with a 5-day Manufacturing Excellence seminar series run by Dr. Justin Barnes of B&M Analysts. The response to this seminar series, which focused on the manufacturing competitiveness challenge confronting clothing and textile firms in KwaZulu-Natal, was highly positive. In fact, in response to requests by firms, the seminar series will be repeated early next year under the Human Resource Development programme of the KZN CTC.

A definite highlight of the Manufacturing Competitiveness programme for this quarter was the programme's first quarterly expert workshop. This workshop took place on the 13th of October with Professor Norman Faull from the Graduate School of Business at the University of Cape Town. Prof. Faull presented to firms on "Competitive practices: Lean thinking and workplace teams". His insights were very valuable to firms and on behalf of the KZN CTC we would like to thank Prof. Faull for taking the time to make the trip to Durban and share his expertise with firms, and we hope to be able to learn from him again in the near future. Shortly after this expert workshop, the Manufacturing Competitiveness programme's 2nd quarterly best practice workshop on TQM took place at Webroy on the 19th of October, and it is the content of that workshop that forms the basis for this quarter's newsletter.

Beyond the Manufacturing Competitiveness cluster activities, the KZN CTC has also been in the process of conducting pilot benchmarks for the textile industry. Five textile firms have kindly committed themselves to participating in this process to fine-tune B&M Analysts' benchmarking methodology to best suit the textile industry. This process should be completed by early 2006, when the KZN CTC will start with its annual benchmarking programme of all member firms. In addition, B&M Analysts has continued with its efforts to grow its database of international clothing firms to allow firms the opportunity to compare their operational performance, for key indicators, against international competitors. Furthermore, with the finalisation of its textile benchmarking methodology, 2006 will also see B&M Analysts beginning to secure international textile data, as well as textile benchmarking data from the Western Cape. These activities will help B&M Analysts grow its textile database to a more meaningful size.

Upcoming activities

Given that the next few weeks are extremely frantic for firms in the clothing and textile industries, the Manufacturing Competitiveness programme's activities have already started to wind down in preparation for the end of the year. However, firms should be prepared for a refreshed and energetic start to activities again early in the New Year. Activities that are already being planned for are:

- An expert workshop on Total Quality Management,
- The 3rd quarterly best practice workshop on just-in-time production,
- A joint Manufacturing Competitiveness training initiative, and
- Continued benchmarking of clothing and textile firms throughout the remainder of the Cluster's financial year.

B&M Analysts would like to take this opportunity to wish all the members of the KZN CTC a festive holiday season and best wishes for the New Year