# Improvement Teams As Support For The Quality System Implemented According To ISO 9000

## Abstract

Many companies have difficulties keeping alive the quality management system after its implementation. This paper presents a methodology for the consolidation and improvement of the quality management system implemented according to ISO 9000 standards by means of Improvement Teams (a personnel participation structured system). The members of these Improvement Teams belong to different hierarchical levels and company departments. They face the challenge of keeping the system alive, by auditing, solving implementation problems and providing improvements to it. A case study of this methodology application is included, developed within a leading Spanish company in the fashion-textiles-clothing business.

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## 1. ISO 9000: A Management Tool

Management systems based on international norms for general application have become highly popular over the past decade, particularly from the ISO 9000 series for quality management (mainly since 1994) and the ISO 14000 series for environmental management (since 1996). There are other important points of reference, such as QS-9000 for the automotive industry.

These management models are perfectly applicable to enterprises of all types, including small to medium-sizes ones (which make up the vast majority). Specifically, the ISO 9000 series, which saw its second revision in December 2000, is a basic model for a company's quality management, with particular emphasis on the logistics-productive system. Logically, as this is a wide ranging international norm, its application is more or less complex depending on each enterprise. Some companies work with their own requirements, or those of their clients, which may exceed those for ISO 9000; whereas for others it is difficult to implement some of the aspects demanded by the norm.

However, for a model of this type to be really useful to a company, an appropriate implementation methodology should be used - one which achieves complete involvement from all personnel in the project. This is the key to implementation. If personnel take part in defining the working methods by collaborating in the creation of procedures or instructions such as those demanded directly or indirectly by ISO 9000, it will then be easier for them to comply.

Furthermore, we must not forget that management and improvement are based on quantification, which in turn is based on data collection. This data has to come, in the main, from a company's workforce who use both paper and computer based forms and reports. If the workforce is not convinced that filling out the forms is useful, it will be difficult to see it done properly. Data reliability will then suffer, and so will its helpfulness when decision taking.

## 2. But, Is There Life After Certification?

Why do companies develop and implement quality control systems? Generally, because their customers tell them to, particularly in the case of small to medium-sized companies, and/or for commercial reasons. In these cases, getting certification is fundamental. In other cases (the minority) the process is undertaken through self initiative, seeing the corresponding norm as a management model that can conveniently be applied to the company, without it having to renounce its own personality in any way when doing things (and if compromises do have to be made, then it is for improvement's sake) and treating the certificate as another result or benefit of the process, not as its single objective.

This should be the path to take. It also has the advantage of acquiring the certificate for those who need it (even with less effort, as it is a product of applying common sense).

But, what is to be done after certification?

The implementation method based on personnel participation, which we have mentioned, should have continuity once implementation is over and quality system certification is achieved.

And, without doubt, continual support and demand from top management at the company is fundamental in keeping the flame burning. Otherwise, everything falls apart shortly after achieving the certificate, perhaps even leading to losing it when renewal auditing is failed. When this happens, it has to be admitted that complacency or abandonment has set in after implementing the system, and if this is the case, there has not been proper involvement from all at the company in the quality system.

However, this extreme situation of loss of certification only happens in a small percentage of companies. A large number of the rest also suffer implementation problems once the certification objective is met, but they manage to maintain their quality management systems with more or less success.

What can we do to strengthen the system? How can we help the quality management system to be understood, corrected, improved and, as a result of all this, truly implemented? The answers lie, without a doubt, in the quality management system receiving support from the participation of all personnel. For this to happen, the company has to enable structured systems to channel this participation. One of these systems, probably the most suitable for achieving this aim in small to medium-sized companies, is improvement groups.


## 3. Improvement Groups, A Guarantee For Keeping The Quality System Alive

An improvement group (or problem solving team) is a small group of people led by a coordinator who belong to different sections or departments in a company and different levels of the hierarchy. They meet periodically to analyse and solve a specific problem or carry out improvements in the company. In general, the group is wound up once the problem is solved or a series of measures is undertaken.

Therefore, one or a number of these groups (according to the size of the company, the diversity if its structure or activities, etc.) can be used to deal with problems generated by implementation of the quality management system, as well as possible corrections and improvements in the system itself.

As stated in the definition, people from different sections of the company should be present in these groups, particularly those most affected by quality management system requirements. Furthermore, it is convenient and necessary for there to be a hierarchical diversity, with the group made up of shop floor workers, supervisors and even high level management.

It is a good idea to start the programme with a single improvement group - the pilot group - with extension of the programme to new groups after results appraisal and dealing with correction of possible errors.

This is the way to keep the system alive, by progressively extending, like the domino effect, the group system to more personnel: immersing the company in a true quality culture which goes much further, without a doubt, than the Quality Department's door.

When implementing an improvement groups programme which gives support to the quality management system, a series of key methodological aspects have to be borne clearly in mind, particularly when initiating the pilot experience, since the functioning and results here will condition extension to a great degree. These aspects are, basically, the following:

- Creation of an improvements groups committee, which carries out the functions of planning, coordination and tracking of the improvement groups. One of the members should be the general coordinator of the improvement groups.

- Election of a coordinator for each improvement group.

- Volunteers.

- Absence of financial reward, public recognition being far more recommendable  with, if needs be, a small gift to participants after finishing their collaboration.

- Scheduling of improvement group meeting preferably outside hours of work.

- Duration of improvement group meeting of about one hour.

- Starting point for the group's activity: quality management system audit reports, system indicators, customer complaints and non-conformities detected internally, degree of fulfilment of quality objectives, etc.

- Training of participants, particularly in the use of tools for developing quality such as brainstorming, charts, cause effect diagrams and Pareto's diagram.

- Presentation and diffusion of improvement group activities to all the staff.

Below we show the way in which these methodological aspects were applied for the implementation of improvement groups for quality management system support in a Spanish company in the textile-fashion-clothing industry.


## 4. A Practical Application: The Roberto Verino Case

## 4.1. Introduction

ROBERTO VERINO DIFUSIÓN, S.A. is a Spanish company in the textile-fashion-clothing industry, in the business of designing, making and distributing clothing and accessories for both women and men. The "Roberto Verino" brand is leader in its market, with outlets throughout Spain and some shops in Portugal and France.

ROBERTO VERINO was the first Spanish company in its sector to gain certification for its quality management system under ISO 9001 in 1997. The workforce for 1999-2000 has been around 250 workers, split almost evenly between the central installations for manufacturing and administration and the outlets.

In this company the improvement groups are a systematic mechanism for participation of all personnel, on the path to continual improvement, where the involvement of people in such a business culture has equal or more importance than the results achieved themselves, though these, as we shall see, are also interesting.

Furthermore, these improvement groups in ROBERTO VERINO are understood to be the fundamental support for the quality management system, given that the subjects and problems tackled by them are within the system and, therefore, improvements or corrections agreed to by them imply modifications or additions in this quality management system.

In implementing improvement groups, the company has had the collaboration of the team from the School of Industrial Engineers at the University of Vigo, authors of this paper. A first improvement group was constituted in 1999; given the success of the first experience the line was continued in 2000 with two new improvement groups.

At the beginning of the first experience an Improvement Groups Committee was set up, with the Human Resources/Quality Manager and the University team. People from this external team undertook the coordination functions. Later, when the programme began to be extended, a newly arrived technician from the Human Resources/Quality Dept was added to this committee.

With regard to the methodological aspects, participation in the improvement groups was planned from the start to be voluntary and with no financial reward for achievements. Meetings were held in the morning, within the working schedule for most group members, and lasted about an hour. They were held in the company's Training Room, which had room enough for the necessary audio-visual aids.

## 4.2. Pilot Improvement Group

The pilot Improvement Group was set up at ROBERTO VERINO to work on revision and improvement of the quality management system.

The aim set for this groups was to review and improve the quality management system in existence at the time, that is, to update documentation, detect possible deficiencies in

technical procedures and instructions and correct them, verify correct implementation of what was specified in the documentation and increase personnel involvement in the quality management system.

As this was the first improvement group, besides this specific aim there was also the aim of satisfactorily introducing the improvement group methodology in the company.

The members of the group were selected beforehand by the Groups Committee. Selected members were explained the programme's aims and invited to participate, never through obligation but rather through volunteering. All accepted with no problems.

The final membership was of 10 people representing different departments and sections of the company involved, more or less directly, in quality management system requirements.

The project was presented to the personnel in this pilot improvement group on 6 July 1999.

A total of 3 working meetings were held by this improvement group, roughly once a month, plus another 9 "interim" meetings from July to October 1999, where working subgroups participated with other personnel from the company. Furthermore, the planning and tracking meetings of the Groups Committee were held during this period.

The internal quality management system audit, carried out on 22-23/07/00, was taken as a starting point for the working group. Before the first meeting (27/07/99), the improvement group was given an extract from the audit report, which contained all the points falling within the group's remit (that is, more technical aspects relating to quality management, those coming directly within the responsibility of the Human Resources/Quality Dept, were avoided).

In addition, and parallel to this, a training course in internal quality system audits was held for the improvement group members during September. The aim was to train internal personnel in undertaking system audit activities, which was done using a programme of theory and practice.

Two notice boards were put up which showed the progress and results of the programme (meeting minutes and other reports) in order to divulge them to all company personnel. Copies of the slides used in the programme presentation and the final presentation of results to management were displayed at the time. These boards were labelled "IMPROVEMENT GROUPS" and care was taken not to place any documents or notices not to do with improvement group activities. One of the boards was located at the main entrance/exit used by all personnel, and the other at the end of the stairway used by personnel (above all operatives) to get to their shop floor.

Among subjects tackled, the following are of note:
  a) Unification of criteria between the Pattern Making Office and the Technical Office with regard to model naming, delivery of materials to one or the other and computer file organisation.

b) Unification of criteria with regard to identification and location of prototypes. This subject, like the previous one, comes within the scope of Design Control Procedure (requirement 4.4 of ISO 9001:1994).
c) Unification of criteria between the Raw Materials Store Manager and personnel from the Product Dept with regard to the way to account for available metres of fabric (usable metres and existing metres). These subjects fall within the scope of Handling, Storage, Conservation, Packaging and Delivery Procedures (requirement 4.15 of ISO 9001:1994).
d) Recovery of the identification system for faulty garments with internal repair. A visual system of red cards had become disused, which meant there was a deficiency in quality management implementation, to be precise in Non Conformity Control Procedure (requirement 4.13 of ISO 9001/1994)
e) Systematization of the data the Technical Office receives on fabric width, due to there having been problems related to the width of particular pieces of fabric.
f) Review of inspection activities, which resulted in a correction and updating of the Inspection Procedure (requirement 4.10 of ISO 9001:1994).
g) Review of aspects linked to non conforming garments, both in garment identification and recording of non conformities and in the recovery or rejection process for them. This also meant a correction and updating of the Non Conformity Control Procedure (requirement 4.13 of ISO 9001:1994).
h) Identification of the complaints area, as contained in the Complaints Control Procedure, which had fallen into disuse due to some changes in the finished product warehouse, where the area was located.
i) Review of the way maintenance operations carried out were recorded. As the system was, there was no sure way of knowing if certain operations, imposed by the Maintenance Procedure, were not done because they were forgotten or because they were unnecessary in some particular cases (requirement 4.9 of ISO 9001:1944).
j) Design of a way to divulge internal quality indicators. Placing of information boards.

The activity of the group was closed with a presentation of the results achieved to Management (2/11/99). The presentation was guided by members of the Groups Committee and carried out by the improvement groups members themselves.

A campaign to capture volunteers for new improvement groups was started before this presentation. The result, after two weeks of intense campaign, was the enlisting of 39 people, an excellent number by any reckoning (at the time there were about 125 people at the factory).

### 4.3. Extension: new improvement

As continuity of the implementation of improvement groups begun with the pilot scheme in 1999, and given the success of this, a new programme of improvement groups was established, whose activity started in February 2000 and finished in October the same year

The improvement groups in the new phase had the aim of improving the quality management system at the head quarters (Group 1, continuity of the previous year's pilot group) and in the shops and their interrelation with the HQ (Group 2).

A joint presentation was made to personnel from both groups in January 2000. At this meeting the new improvement group programme, their aims and the basic methodology to be followed were presented. An extract from the Autumn-Winter mid-term quality report was given, which contained available mid-season quality indicators and information of interest for improvement.

The key methodological aspects were similar to those of the previous experience. Finally, on 31 October, 2000, a presentation was made to General Management of the results obtained by both improvement groups.

### 4.4. Improvement Group 1: Quality management system improvement

This improvement group focused on improvement in the quality management system, that is, it was the natural continuation of the pilot group. The scope of its activity was fundamentally logistics-productive (including new model development and industrialisation activities), although improvement ideas arose that affected other spheres (e.g. design or shops). The aim was to try and improve quality indicators, by analysing problems and their causes, and correcting the documentation and implementation of the system wherever necessary.

Eleven people made up this group. Once again, an attempt was made to represent all areas implicated in the global quality management system. On this occasion, production operatives also joined in. The group held 7 meetings altogether, on roughly a monthly basis. In addition, two *ad hoc* or interim meetings were held, in which non group members took part.

Below are the main subjects dealt with:
  a) Problem of stains on garments, the main reason for customer and shop complaints (related to Complaint Control Procedures, and requirement 4.13 of ISO 9001:1994).
  b) Improvement of information on the state of fabric inspection (Inspection Procedure, requirement 4.10 of ISO 9001:1991).
  c) Implementation in the Line plant of an identification system for defects in garments, by using non-damaging adhesives (Non Conformity Control Procedure, requirement 4.13 of ISO 9001:1994).
  d) Training of staff responsible for cutting by staff from the Technical Office in drawing techniques on the computer system. This allows flexibility to be increased as supervisors are able to carry out the task outside Technical Office working hours.
  e) Other improvements, such as changing the lighting on the measuring and fabric inspection machine to improve inspection process conditions; or placing stops on wagon bars to keep garments from creasing when being shifted by the movement of the wagon.

*4.5. Improvement Group 2: Shops/HQ Interrelation*

This improvement group focused on improvement in the shops-HQ interrelation and contributions to the implementation of Quality System requirements in the outlets.

A total of 9 people made up this group. In this case an attempt was made to bring together a group of people linked to a greater or lesser extent by their various posts to shop activity. In seemed interesting from the outset to include a production supervisor, who could provide ideas regarding production technique matters, which on numerous occasions provoke enquiries or shipments of clothes from the shops.

The group held 5 meetings altogether, on a roughly monthly basis. In addition there was one *ad hoc* meeting.

Below are the main subjects dealt with:
a) Review of the whole labelling system.
b) Substitution of brand labels (those sewn inside the garment, in such places as the collar or side, with the "ROBERTO VERINO" inscription) for higher quality ones which guaranteed no discomfort to more sensitive customers. The sewing of these labels was also reviewed.
c) Sending of information leaflets for customers in the shops on appropriate use and care of the garments.
d) Improvement in IT equipment cleaning in the shops.
e) Review of procedures for garments needing re-labelling
f) Publication of internal communiqués to shops to clear up working concepts or methods that were seen to cause trouble or were unclear. In some cases it was necessary to review existing procedures.

All these subjects are found in the Shop Quality Manual, which contains the quality management system requirements for the shops, and in the procedures applicable to the Shop Management Dept.

*4.6. Conclusions from the experience*

The results from this experience have been highly satisfactory, both from a participation point of view and from the results achieved. This, along with the high number of volunteers, means that the formation of new groups in the company can be assured, continuing this line of work leading to global quality management.

At the same time, staff trained and qualified as internal auditors continue to participate in internal audits in both the manufacturing facilities and the shops. The number of internal auditors belonging to the workforce is forecast to increase.

Finally, it has to be noted that the degree of company commitment to the improvement group implementation project has been very good, with the Human Resources/Quality Manager

taking on promotion and direction of the improvement group programmes and having great support from all the other Groups Committee members. This has all been with firm backing from General Management, which has attended the results presentations with great interest, and used them to encourage continuation along this line of work towards continual improvement.

## 5. Conclusions

In this work we have attempted to demonstrate that improvement groups, and a structured system of personnel participation, are an excellent vehicle for keeping the quality management system alive, once the system implementation and certification phase is over. Not only do they allow continued improvement of the system, aiding the head of quality or staff specifically assigned to quality in the company, but they also manage, in a real and practical way, to bring the concept of quality closer to all personnel, in a far more effective way than classical theoretical training sessions on the subject and the mere obligation to comply with quality procedures.

However, the success of an improvement groups programme is heavily conditioned by the fulfilment of a series of key methodological aspects. These aspects have been pointed out in this work, and their practical application has been illustrated by the case of a small to medium-sized Spanish company where the experience has been a success.