



SAP QUALITY MODUL AT COATS GLOBAL

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Abstract:

*The presentation will touch upon several topics of the symposium such as **analysis, testing and metrology, and quality management**. I want to discuss these areas from **a practical point of view**.*

It is my intention to show you how the management system of a global company was built up systematically, step by step.

Coats has acquired and established a number of production units over the past few years. It has also started to globalize products and production technologies to be able to supply global customers with consistent, reliable products. To achieve this, Coats installed SAP, the world's best business software available at the moment.

Coats recently decided to complete its SAP system with a Quality Module (QM). The intention is to have all production controlled by the same quality system. Consequently, reporting and results analysis will become very easy and quick in each plant. Also, data from different parts of the globe will be comparable as the recording and collection of test results, testing methodology and plants become consistent.

I will talk about the following:

SAP: The world's leading provider of business software delivers products and services that help accelerate business innovation for their customers.

Coats : Global leader in sewing thread and needlecrafts products.

First steps of the QM project: See where we are and decide where we want to get.

Implementations: what we have done and where.

Procedure: what an implementation looks like and what steps it includes.

Results: What does the implemented system give to a single user, to the local Quality Manager and to the Global Quality Director?

Support: Implemented units need some support to keep the system up to date, involving new products and follow up specification changes.

Future steps of the project. There are still many things to do!

Summary

1 INTRODUCTION

Coats has, of course, always had a quality management system, quality standards, and databases to control quality processes. Thus I am not going to talk about the way Coats introduced quality assurance, but rather about its integration over the years into its customized management system.

Unfortunately, I can only hint at the greatness of the result. But if you have ever played the game of manufacturing in a global pitch, you will be able to assess what we've achieved over the past few years.

I do not mean to tell you to start the day tomorrow installing SAP. Rather, I want to show you a way of handling quality standards.



2 ABOUT SAP

As the world's leading provider of business software SAP delivers products and services that help accelerate business innovation for our customers.

SAP founded in 1972. SAP currently has sales and development locations in more than 50 countries worldwide with more than 47,600 employees. Headquartered in Walldorf, Germany.

Today, customers in more than 120 countries run SAP applications.

Helping Companies Become Best-Run Businesses which means allow them to act quickly with increased insight, efficiency, and flexibility.

By using SAP solutions, companies of all sizes – including small businesses and midsize companies – can reduce costs, optimize performance, and gain the insight and agility needed to close the gap between strategy and execution.

SAP has highly skilled teams with about 15,000 people in 11 software development centers worldwide.

SAP develops their products in close cooperation with customers and independent business partners.

In 2009, SAP invested €1.6 billion (2008: €1.6 billion) in research and development for business software solutions.

3 COATS

Global leader in sewing thread and needlecrafts products.

Established in 1730 by Henry Milward at Redditch, UK. Today the head office is in Stockley Park, London.

Throughout our 200 year history, Coats has established a tradition of landmark innovations in products, colour technology and manufacturing processes, many of which have become global industry standards.

Coats is a truly global operation with over 20,000 employees engaged in customer service, manufacturing and distribution in 71 countries, worldwide.

We therefore have the unique ability to service our customers anywhere in the world with globally consistent products, dependable service and creative technical solutions.

Coats offers products for apparel, embroidery, speciality and zips manufacturing from dozens of different raw material for several end uses.

Coats has product solutions from jeanswear through furniture production to automotive customers.

Coats manufacturing units are globally certified against ISO 9001, ISO 14001 Environmental and ISO/TS 16949 Automotive Quality Systems.

4 QUALITY / GLOBALITY

No one is surprised at the thought of global operations today. Yet it entails a price and quite a few anomalies. For example, it was a challenge to keep track of test results of global products manufactured at sites with thousands of kilometers in between.



Coats has acquired and established many production units over the past few years. It has also started to globalize products and production technologies so as to supply global customers with consistent, reliable products.

The problem with global production is, however, that different sites use various ways of recording data for quality assurance purposes. The way of reporting may also be different.

5 FIRST STEPS

Once Coats decided to introduce QM, an international quality committee was set up of both respected experts in various areas and people who were to play roles in the project.

The task of the committee was to collect operational requirements of quality, and analyse their usefulness. If necessary, tests were to be reinterpreted. After that, they were translated into SAP language systematically. As a result of this procedure, different kinds of solution packages were created.

What does this mean? We bring together the product types, technologies and special customer requirements. Finally, we created the following solution packages: Certificate of Conformity solution, Dyeing and Finishing process control solution, Spinning and Twisting solution.

6 SAP QM SOLUTIONS

6.1 Certificate of Conformity solution

A challenging area. The difficulty lies in the fact that Coats is a global manufacturer of diverse products ranging from simple cotton sewing thread to products for shoes and furniture, and even for the automotive industry.

Coats, however, must be able to issue COCs at any time, for any product, wherever it is manufactured.

Let's see the COC requirements Coats may face.

Automotive and other customers of special products want to see results for each delivery. This poses no problem.

Other customers (for example garment makers) want to see trends rather than results at batch level.

Others are sensitive to format. They want to see the data in a layout they use, not that of Coats.

Still others require results for one or more specific parameters not normally tested by Coats.

The flow of printed paper is also an interesting area. A large number printouts is difficult to handle.

The above problems were, in the past, solved by each unit, and the solutions may have been different.

SAP QM is a system available at each Coats site, and is the same everywhere.

The basic test of the product is always carried out at the site of manufacturing.

The type of testing depends on the product. If it is a special, the product is tested 100%. Results are saved in SAP QM and may be retrieved at any time based on the production order number or other parameters.

Global products are tested or not, as per process control procedures. Again, results are stored in SAP QM.



SAP QM allows users (depending on authorisation) to see raw results. Users may include QM staff, site quality managers, sales staff in another country, warehouse employees, quality managers at any other site, etc. As SAP is available everywhere, Coats regulates and audits authorisations.

The tested batch is delivered to the customer, or placed in a local or other Coats warehouse. In the event of delivery to the customer the COC may be printed out at the manufacturing site. However, if it goes to the warehouse, there is no need to print it out. The COC is always printed from SAP when the product goes to the final customer. After all, the raw results are available at any time and we are working with them.

SAP includes various types of customer form types as well. This means that we can print raw data from the system in any way. The data are variable, there is no need to print them in some form and then copy data from one paper to another, etc. The results of a batch can be shown in various formats as required by the customer. SAP also makes it possible to load data of batches delivered into the customer's database, or generate a PDF document, if required, which is then sent to the appropriate location.

Another advantage is that quality data can be expanded. Suppose that Tests 1, 2, 3, and 4 were executed in the manufacturing process, and Customer 1 wants to see them. Various quantities of the product end up in various Coats warehouses. Customer 2 will not be content with the above results on the COC, but will want to see Tests 5 and 6, too. If the request is for special tests which are not part of normal procedures, they can still be done during delivery. It is possible to add these results to the SAP database and make them globally available.

The system allows the test results of an article or article group to be averaged in a given period. This, again, can happen anywhere in the world. You don't need to be at the manufacturing site. The results are shown and you can select the parameters to be specified on the printed forms.

6.2 Process control tests

Using various raw materials, Coats manufactures various products for a wide range of applications.

Erratic and complicated orders justify the need for a flexible yet accurate system. It must be flexible since the number of work orders may fluctuate in a range of 2 to 6 thousand in Budapest; and it must be accurate because we need to find the right sample to represent our current production. The system of process control was designed to meet these requirements.

Fortunately, with the introduction of SAP we had already created IDs and codes which allowed the creation of the system. All we had to do was connect those identifiers with QM and also define the test rules. The test points are in place: dyeing, finishing (length and lubricant content) etc. These can be configured in SAP as inspection types. Then the inspection groups are defined. After that, the testing frequencies and parameters.

As mentioned, with SAP the identification parameters have been established. For example, there is a Coats color value. This number refers to shade quality (light, medium, dark). With QM all we had to do was set colors and color groups tested for wash and friction fastness. Once we have the setting in place, the system will automatically sort out the testing.

For testing other parameters, we use "skipping" which serves to adjust testing frequency to the number of work orders automatically. This eliminates the need for workload / capacity analysis. SAP constantly monitors workload and the preset skipping code ensures appropriate frequency rates.

The issue of inspection orders is a two-tier process. Depending on the above rules, SAP generates an inspection lot which is displayed immediately on the QA Quality Worklist. QA will then be able to track, order, etc. the tests to be done.



At the same time, an inspection order is printed for the operator to use. Once the test is completed, data are entered and saved in SAP. After that, open inspection lots are closed and passed using a virtual stamp. Results are stored in the QM database.

Paper flow and local SOPs may vary slightly. The process control solution concerns the essence, not the details. The point is what to test, how often, and how to take samples.

6.3 Spinning and twisting solution

QM was first installed in FG manufacturing areas because, unfortunately, SAP systems in spinning and twisting mills are not yet ready for QM. Processes are of course monitored, but QM will greatly reduce response times.

The emphasis is on management integration.

7 BENEFITS OF SAP QM

7.1 Benefits to Quality User

Simple, transparent system linked to the factory's production system. Information is always interpreted in the same context. On the Quality Worklist, it is simple to monitor batches to be tested. Transfer between shifts is also easier as a list of open tests is displayed at the press of a button. The interface is truly intuitive.

7.2 Benefits to local Quality Manager

The Quality Manager is given the means to analyse complaints regionally. No need to spend days collecting data. They may be retrieved from SAP QM and re-grouped freely.

Easy to assess and compare employee performances, even at a global level.

Local reporting automated.

7.3 Benefits to Global Quality Director

Simple, transparent system giving the means to interfere in the case of quality problems. Conversely, testing frequency may be lowered immediately when justified, at the press of a button. (For example, skip rate.)

The Global Manager also has a Statistical Process Control tool specifically developed for Coats. It can be used to calculate and modify quality parameter approval and action limits.

SAP QM gives you the means of reporting global parameters just sitting at a computer – every QA manager's dream!

8 IMPLEMENTATION PROCEDURE

8.1 Implementation carried out by a functionality team including:

Project manager: Responsible for the success and direction of the project. Plans project and prepares documentation. Organizes and executes training. Prepares masterdata ready to upload. Reports to Coats head office.

SAP Advisor: has overall knowledge of QM and other modules; carries out customization.



Printing Solution Advisor: Responsible for all paper output. Setting up printers, form types.

Masterdata maintainer: Uploads the prepared masterdata, carries out cross checks.

8.2 Steps of Implementation

Blueprinting includes technical drawings and all necessary data for implementation.

General training: to prepare management for implementation. Select local implementation team.

Masterdata collection clarification: facilitated by comprehensive naming convention of specification parameters.

SAP Customization on plant level: Carry out SAP setting based on the earlier agreed Blueprinting document. This involves material master, customer master, and production routings.

Site Simulation Test (SST): In parallel with the live SAP system, Coats has a test system for simulations. For a couple of days we can simulate, test, and analyze changes to be introduced in various processes.

Cutover: when everyone is happy with the system we go live. The cutover could be an immediate release or we can go live by slices.

9 IMPLEMENTATIONS SO FAR

9.1 Certificate of Conformity production

Europe, East Asia, South Asia completed and live. South and North America planned to go live 2011.

9.2 Apparel production

Europe completed and live, East Asia 70% completed, South Asia 30% completed. South and North America planned to go live in 2011.

9.3 Speciality production

Europe has just been completed and gone live 100%, rollout to all other regions will be started in early 2012.

9.4 Crafts production:

Europe 100% completed. South Asia planned to go live Q1 2011. Other regions earliest implementation in Q3 2012.

10 FUTURE STEPS

Start implementations in North and South America

Involve all manufacturing units in South Asia

Start Grey Thread Solution for Spinning and Twisting sites

Create a data consistency report

Include Complaints Database to SAP

Complete Statistical Process Control report



11 SUPPORT

Live plant support is not limited to go live. To include hundreds of thousands (!) of products in local databases and eliminate phased out products requires ongoing support. SAP QM is a living system, changing together with other operating functionalities.

12 SUMMARY

It was not my intention to reveal confidential information regarding Coats specifications. I have shared with you a much more important secret: our corporate approach to quality assurance.

The work will involve an international community for years to come. The strength of SAP QM lies in the integration of quality test results together with the systems of Production Planning, Manufacturing, Warehousing, etc.

The SAP Quality Module is available to all SAP users.

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