



Lean Audits and Quality Management Systems (QMS)

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There are two kinds of people, those who do the work and those who take the credit. Try to be in the first group; there is less competition there.

Indira Gandhi (1917–1984)

19.1 Lean Audits

19.1.1 Audit Types

Audits can be described as a systematic and structured performance evaluation and assessment of a system, process, or product or any other area by internal or external auditors. The aim of an audit is to evaluate and approve or disapprove the assessed area by standardized criteria and questions, to define areas for actions, and to ensure the sustainable implementation of the actions and improvement areas. Assessment criteria in audits are based on customer and stakeholder expectations. Audits can be clustered in systems, process, product, control, and special audits as shown in Table 19.1. Lean audits are conducted to determine if the business is properly implementing and lean management methodologies are implemented into the company and value chain (Helmold and Terry 2016). This is achieved by a detailed 360 degrees analysis how lean processes with a goal towards recognizing opportunities to improve processes and to eliminate waste.

19.1.2 Quality Management Systems (QMS)

A quality management system (QMS) describes in enterprises and organizations the management function and all organizational activities, which serve the

Table 19.1 Audit types

Audit type	Description
Systems audit	Evaluation of the quality management system of organizations by external certification agencies (TÜV, DEKRA) Examples: DIN EN ISO 9001:2015, TS 16949, International Railway Industry Standard (IRIS) or IATF 16949
Process audit	Evaluation of a (manufacturing or service) process to qualify or disqualify a process-oriented example of a product or service by assessing a reference process from supply side, incoming material to the despatch (also from other customers) Examples: VDA 6.3, SEAP (Railway)
Product audit	Planning and execution of the assessment of a finished product to be delivered to the customer. The audit consists of checking the specification, drawings, capacity, and other important aspects and normally involves the trial run of the entire manufacturing process (e.g. 300 parts, run at rate) Examples: VDA 6.5, Part Production Approval Process (PPAP), Production Approval Process (PAP)
Control audit	Control audits aim to control the progress of previously conducted audits
Other audits	Any other audits in areas like safety, health, environment, tax, and financials Examples: 5S audits, tax audits, environmental audits (ISO 14001), IT audits (ISO 27001), financial audits or health, safety and environment (HSE) audits

Table 19.2 QMS

QMS norm	Industry
ISO 9001:2015	General quality management system
VDA 6.1	Automotive industry
IATF 16949	Automotive industry
IRIS	Railway industry
EN 9100	Aerospace industry
ISO 13485	Medical industry
TL 9000	Telecommunications industry

Source: Author's own table

improvement of the process quality, the work quality, and thus the product and service quality. QMS are using lean features for process improvements. Table 19.2 outlines the most common standards of QMS in certain industries.

19.2 Case Study: 5S Audits in Berliner Kindl Schultheiss Brewery

With 5S audits, the Berliner Kindl Schultheiss Brewery (Radeberger Group) makes sure that all processes (purchasing, operations, logistics, production control, and planning) are evaluated along the seven most important levers for their optimization. On the basis of these results, further measures can be derived on the way to a lean and smart production. With the audit, the management receives an objective

assessment of lean. It includes 2 days of on-site operation and is conducted in the form of a walk-through with short interviews with the people in charge. At the end of the second day the results will be presented. Several lean performance indicators are measured through this approach, which also give an idea of the lean maturity. The evaluation of the respective dimensions is based on a SWOT analysis (Helmold and Samara 2019). The lean audit provides a solid basis for planning further project steps. Thus, the identified potentials can be used for a workshop to develop appropriate target states and measures. Finally, in order to achieve this, there is an extensive set of methods in the context of the Schneider co-developed lean-factory design concept. This interdisciplinary optimization concept, developed at Landshut University of Applied Sciences, is based on many years of research and numerous best practice projects. The audit can be repeated annually to measure project progress and to set and prioritize the following steps.

The Berliner Kindl Schultheiss Brewery conducts the 5S audits on a monthly basis as shown in Fig. 19.1. It can be seen that the five categories (sort, set in order, shine, standardize, sustain) are analysed. The audit is linked to a dynamic action plan and progress control.

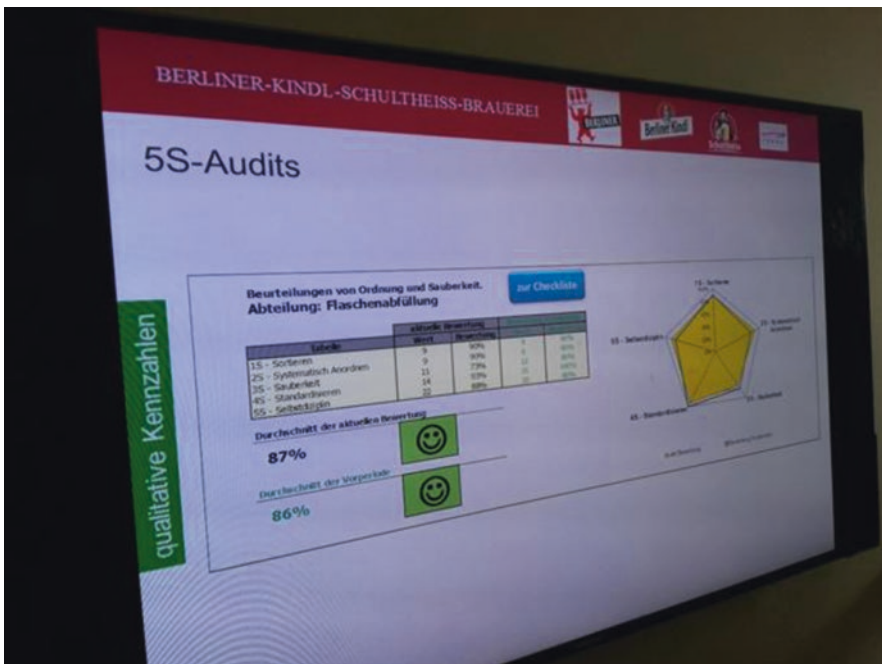


Fig. 19.1 5S audit in Berliner Kindl Schultheiss Brewery. (Source: Author’s Source)

References

- Helmold, M., & Samara, W. (2019). Progress in performance management. Industry insights and case studies on principles, application tools, and practice. Heidelberg: Springer.
- Helmold, M., & Terry, B. (2016). *Global sourcing and supply management excellence in China. Procurement guide for supply experts*. Singapore: Springer.