

# **Applying quality management practices in small companies: a case of 5S implementation in a Portuguese manufacturer**

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## **Abstract**

Whereas the implementation of quality management philosophies is acknowledged as a key driver of manufacturing performance, and the knowledge about existing tools for quality improvement has become widely disseminated, the systematic adoption of such methodologies still creates important challenges for small and medium sized companies. Small manufacturers often operate with very limited resources, a context which poses important constraints to introducing operational changes, for the elimination of waste and the improvement in productivity. For these companies the adoption of hands on methodologies, such as the 5S technique described in this paper, may offer an important initial step to address quality problems, and to fight existing inertia in the production and staff routines (Evans & Lindsay,2011).

In this paper we describe the application of the 5S methodology in a middle sized company operating in Portugal as a manufacturer of furniture for the healthcare sector. The company faces difficulties in the control of raw materials, which have been leading to inefficiencies in the management of resources. The lack of a systematic quality management practices, has led to a progressive inertia in the production system, notably in staff routines and attitudes towards change. Moreover, these problems were aggravated by the recent growth on the operational volume and variety, as the company steadily has been investing and progressing towards new export markets.

The paper describes the implementation of 5S, addressing the key difficulties and sources of resistance found in the process, and the strategies adopted to surpass them, including staff training and a thorough assessment of the company's processes. A key step in the kick-off of the 5S implementation involved the conduction of a survey with all the employees to assess the existing difficulties and anxieties. The survey results supported the existence of employees' willingness to change and contributed positively to build up the workers acceptance towards the quality program, with many of them contributing with suggestions which were useful to the preparation of the 5S implementation strategy. The preliminary preparation phase was determinant for the effective follow up of the 5S routines, an involved the setup of teams which

were responsible for the development of strategies to disseminate the objectives of the 5S technique, and to motivate the employees. The implementation of the 5S was conducted in a stepwise manner in the two main production areas identified in the company: the area responsible for metal working and locksmith, and the assembly sector. The implementation of the 5S techniques was initiated in the metal working area, and advanced in a phased manner to the subsequent operational area of assembly. The choice was not to complete fully the thorough 5S implementation in one sector and then move to the following, but rather to initiate the 5S in the assembly area as soon as only the first phase of 5S implementation was completed in the initial metal working sector. This approach contributed to achieve an early visibility of the 5S results across the company, leading to a reinforced employee's commitment in the implementation.