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After obtaining my Bachelors degree in Electrical Engineering back in 1994, I chose to start a career as an engineer in the manufacturing industry. I spent over 20 years in this industry working mainly with two major companies located in Malta: one international and the other one local. After gaining the necessary practical and managerial experience I felt the need to continue enhancing my knowledge and skills in the latest manufacturing concepts and best practices in this industry.

I chose Loughborough University as it is a renowned University in England and it offered a Master's degree in Manufacturing and Management that I really wanted to pursue. The name of the course was Masters of Science Degree in Engineering Design and Manufacture and the University offered students to follow this course by distance learning. I chose to follow this course by distance learning as it suits very well with my current lifestyle which is quite a busy one. Having a full time job as an Operations manager and also have to take care of my family is quite challenging and following such a course by distance learning was the best possible option.

This Masters course consisted of the following Modules Quality Management , Operations management , Lean and Agile Manufacturing , Marketing for Engineers , Design for Assembly, Business Strategy , Engineering Design Methods and Advanced Manufacturing Technology. All the course modules offered deep insights into the subjects covered and explained in a lot of detail with practical industry examples. One of the major benefits of following this Master's degree was that I was that it helped me carry out my job as an Operations Manager in a much more structured, organised and efficient manner. In addition this course introduced me to the latest manufacturing concepts that are currently being practised by large manufacturing companies. Such concepts including Lean and Agile Manufacturing, JIT philosophy, SMED, Kanban, Kaizen, Design methodologies and the 5S practices.

The last module of this Masters of Science degree was the dissertation. The title of the dissertation that I chose was "Implementation of SMED and 5S tools to improve the OEE of a PET bottling and Packaging Line ". The thesis is about the implementation of the 5S and SMED tools on the PET bottling and packaging line at my current place of work. The PET bottling and packaging line is a fully automated line where table water and carbonated soft drinks are bottled and packaged with high efficiency and high product quality. 5S is a Japanese philosophy which is used to maintain and sustain a highly organised, clean and safe working place. 5S stands for Sort, Straighten, Shine, Standardise and Sustain. I have implemented this Lean tools in the different process areas of the PET bottling line including syrup making process. Blowing of PET bottles, filling process, labelling process, shrink wrapping process as well as the palletising process.

The other tool that I used in my dissertation was SMED. SMED is an acronym that stands for Single Minute Exchange of Dies. This tool was also invented in Japan and is widely used by

manufacturing companies that follow the lean philosophy. SMED is used to minimise the changeover times on production lines by eliminating all sorts of waste in the changeover process and focus more on carrying out the value adding tasks in faster, safer and efficient manner.

In my thesis I explained how together with my production teams I applied the SMED philosophy at my place of work. I worked on two major types of changeovers that are carried out on the bottling and packaging line: flavour and bottle size changeovers. Flavour changeovers are used when changing from one flavoured product to another while bottle size changeovers are carried out when changing both flavour and also bottle size. The SMED methodology was used for minimising changeover times for both all types of changeovers. I am also pleased to state that very good results were obtained after applying this methodology and significant improvement times were noted for changeovers.

All in all, my Masters course helped me to keep up to date with the latest manufacturing practices that are currently used by the big players in the Manufacturing Industry. I strongly recommend such a course for all those engineers and other competent technical personnel who have gained considerable experience in this industry and would like to further enhance their knowledge on the subject. This Masters course will definitely provide them with valuable information on the current manufacturing practices and trends being used by large successful companies operating in the manufacturing industry.