LEAN-MANUFACTURING AND PROCESS STANDARD OFFSET STANDARDISATION FOR THE PRINTING INDUSTRY

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In the process of preparing optimization projects for the printing industry, that is in a constant stage of development, the employees competence requirements have already now drastically changed and will change even more in the future. Different new technology trends often introduce a misleading image of where the printing industry is moving. In order to secure the sustainability of printing industry, we should introduce the most important possibilities for future production already in the early stage of industry developments. This white paper will introduce key-points, trends and some critics how companies understand the workflow process standardisation, employees training goals how to apply the standardized manufacturing processes and as successful end of the standardisation project, PSO certify their manufacturing process as a proof of manufacturing quality excellency.

Some of the EU member states printing industries, due to either economical reasons, mislead propaganda or an insufficient competence level cannot enable the standardization projects for the industrial manufacturing, to implement the Total Quality Management, 6 Sigma and ISO standards based quality programs on a higher level. Often, due to the lack of modern manufacturing theory and competency subjects at VET or HEI, the employee's trainings for the 5S, LEAN-manufacturing theories will start only at industry, then the personal characteristics are already established for printing-, bindery-, etc. operators. To establish a proper education that also supports the industry management theories, it is recommended to join the forces of different countries with an aim of bringing more young people into the VET and HEI of Graphic Industry and to train already young specialists to modern manufacturing theories. If we can, all together, improve the existing curriculums with industrial manufacturing theories, then we will not spend double resources, but supporting each other's efforts, we can keep VET, HEI and printing industry sustainable. This paper we will describe some examples from undersign experiences, how to implement at printing industry the standardized workflows and quality control routines. Based on field experiences we have to look inside the ISO-12647-2(2013) requirements and printing industry quality methods:

1. PSO used on global printing markets;

2. LEAN-manufacturing used on global industrial markets;

The standardisation methods of FOGRA and LEAN-manufacturing include the best of their competences. After implementing the standardisation routines (example 5S, TQM etc.), industry will have the potential to continue their process optimisation projects at higher level and fine-tuned the manufacturing routines to PSO certification. Even by developed manufacturing theories, it can-not/will-not replace the manual working competences and skills that are required in order to work with high speed and ITC based machines in a company, in accordance with job profiles and working place discipline, exactness, teamwork etc.

Common standardisation theories are mostly based on the offset technology in the field of media content printing or civil production printing. Due to the trending reduction of print runs of the traditional offset, production is quickly changing its focus to digital output devices or other printing technologies as well flexo, gravure etc. Misguided assessments and focalisations concerning the future trends of printing industry are leading to the reduction of VET courses, to closing down of well operating departments and to giving young people the erroneous information that printing industry is a heavy load and stress on environmental aspects. To promote in changing trend of the printing industry, we shall focus our standardisation routines as well on sustainable printing technologies of packaging printing, printing on difficult substrates and giving to the printed products high value for ITC, electronic, pharmacy etc. industries. Packaging and multi-technology printing will keep the production printing sustainable for a long time. As our studies have shown, all printing industry fields are in need of broad-minded specialists to be able manages difficult standardisation processes and follow them up on everyday based manufacturing and operation.

Keywords: *printing industry standardisation theories, LEAN-manufacturing theories, Total Quality Management, 6 Sigma, Process Standard Offset (PSO).*