AN INTEGRATED APPROACH OF THE PROCESS IMPROVEMENT PHILOSOPHY WITHIN THE SUPPLIER NETWORK: THE AUTOMOTIVE INDUSTRY CASE

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Abstract: The present study aims to analyze the functioning of an integrated system comprising the essence of contemporary operations management, namely the methods of process improving in a representative and essential industry. The priorities of local management practices follows subjects such as the savings, efficiency, optimizing the resources usage, remove of dissipation, total quality etc. We analyze the challenges accompanying the efforts of some entrepreneurs to assimilate the principles of improving and to acquiring the lean organization status. This work deals with the processes improvements, respectively the applying of lean manufacturing tools and principles within the automotive industry in Craiova and in adjacent area. The immediate utility of the processes improvement principles comes from their contribution to profit growth (cost reduction) and also to improve the competitive position. The research is a directed investigation on the optimization programs and processes applied by a dozen of organizations working around the great producer operating in or near Craiova, and by analyzing the directions promoted on their own or under the coordination of the driver-company. The implementation of process improvements principles at Ford's supplier's network is one of the biggest objectives. The conclusions highlight the intentions and the achievements smoothing the philosophy of continuous improvement processes, the incumbent potential of these initiatives to eliminate the waste, but also some failures.

JEL classification: O31, M11, L62

Key words: dissipations, lean philosophy and lean thinking, performance measurements, processes improvement management, lean manufacturing

1. INTRODUCTION

The trends in economic development aims for many years to establish the networks, clusters or consortia which wants the coordination and concertation of joint efforts regarding the optimization of activities in the key industries. The apparently competitive domestic automotive industry is conform with these objectives; both major manufacturers present in Romania characterizes their actions by extensive streamline processes and tries to extend their best practices to the firms placed upstream in the industry.

A process is characterized by a chain of activities that alter the essence of the product and which always increases the value proposed to the beneficiaries of these activities (Laudon & Laudon, 2011). Rabbani (1996) gives clarifications by describing the process as a repetitive sequences of activities controlled by the process coordinator, and these sequences can be translated into measurable results that meet the needs of the beneficiaries placed downstream.

The immediate utility of the principles regarding the management of process improvements comes from its contribution to the profit growth (costs reduction) and from the improvement of competitive position. Our research aims to investigate the optimization programs and processes proposed by an organizations assembly around the great producer from Craiova, by analyzing the directions promoted on their own or coordinated by these ten companies, and also the and potential incumbent inside their initiatives to eliminate the loses. The results of our study highlights the intentions and the achievements of the corelated philosophy on the continuous processes improvements, but also some of the failures observed in the driver-company (its existence determins the functionality of the partner enterprises) efforts on its objectives of configuration of the *lean desing* (Jayaram et. al., 2008).

2. RESEARCH METHODOLOGY

The sources of the data and interpretations proposed in this article are represented by the closely analisys of each case in the sample of the 11 enterprise. The selection criteria of these organizations was the spatial proximity and the similarities on the organizational profile. They were introduced in the sample all the companies conducting their operations on the industrial Ford's platform and also two key providers located in close cities (IAC-Balş and Yazaki-Caracal).

The case study includes some interviews taken from the members of management teams. In documenting the investigation, there were observed reluctant attitudes of the representatives of the companies. Basically, a large opening was proven only by the representatives of the driving-company Ford and Faurecia, while Kirchhoff and IAC managers showed their undisguised availability for honestly responds at the challenges of this research.

Since not all of the interviewed representatives allowed the presentation of quantitative data and the processing of their information, some opinions and conclusions of the research have the character of generality.

3. INVESTIGATION'S ASSUMPTIONS

The entire research approach regarding the practical aspects of implementation of the systematic' processes improvement management consider an assumption of the utility of this system, essential at long last for transmitting and awareness of the whole vision and strategy to all employees, at any level.

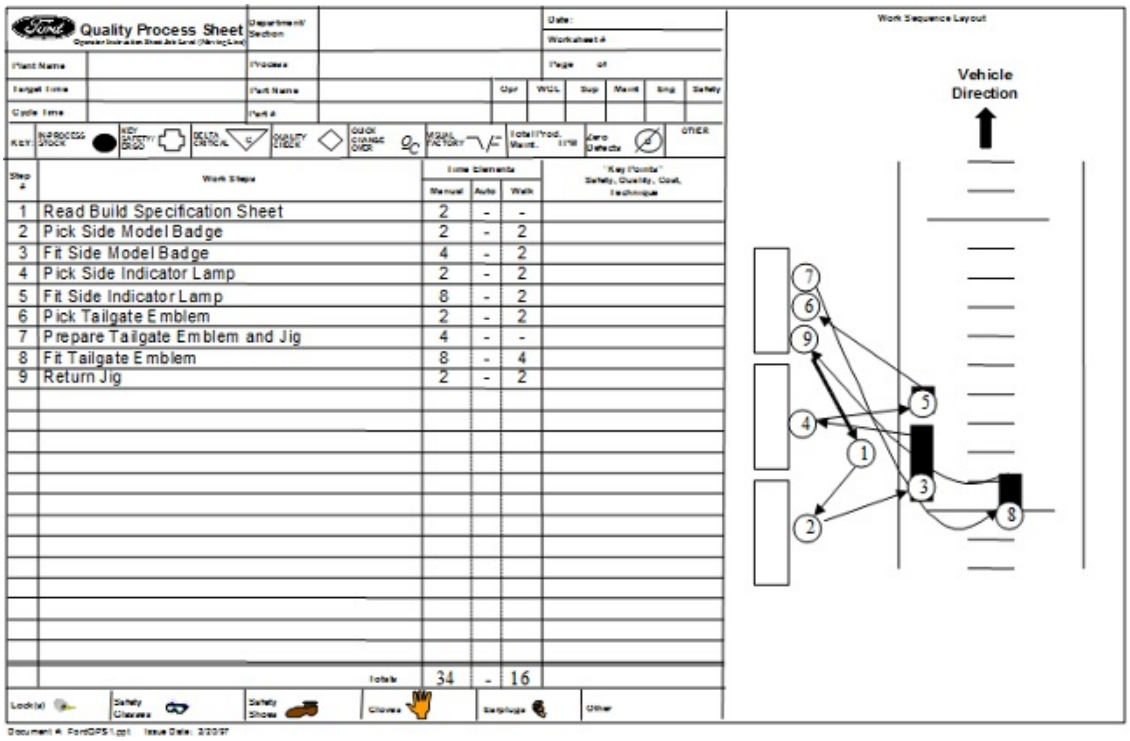
A second assumption states that the principles of processual optimization are much more than a simple copy from the part of the partners, this practices were tested and validated in other units thereof (in Europe and around the globe) under the long collaboration between them and Ford Motors Company.

Therefore, our entire pleading demarch try to demonstrate the effectiveness of ***an integrated approach of these processual optimization philosophy, inside the network of providers within the automotive industry***.

4. ANALYSIS AND INTERPRETATIONS

We can say that there are no other industries (in Romania) within which the manufacturing processes are formally described more rigorous than in the case of the driving-company Ford. The system implemented by Americans in all their enterprises uses

two sheets placed near or within the work area of each employee (according to the internal Ford Motors Romania document, 2012). We refer to the Quality process sheet (QPS - Figure no. 1) and the work element sheet (WES - wich contains a description of each work/ moving operation item) = respectively each of the nine work items from the QPS sheet listed in Figure no. 1.



Quality Process Sheet

Step #	Work Steps	Time Elements: Manual	Time Elements: Auto	Time Elements: Walk	"Key Points" Safety, Quality, Cost, Technique
1	Read Build Specification Sheet	2	-	-	
2	Pick Side Model Badge	2	-	2	
3	Fit Side Model Badge	4	-	2	
4	Pick Side Indicator Lamp	2	-	2	
5	Fit Side Indicator Lamp	8	-	2	
6	Pick Tailgate Emblem	2	-	2	
7	Prepare Tailgate Emblem and Jig	4	-	-	
8	Fit Tailgate Emblem	8	-	4	
9	Return Jig	2	-	2	
	Totals	34	-	16	

Figure no. 1. Quality process sheet (a procedure for the manufacturing line operators)
Sourse: adapted version from the handbook of the Ford's new employee

During the investigation we realised, we found that the Ford suppliers knows and approves the usefulness of these sheets of quality process. However, the administrative difficulties and the high number of these sheets (related to each homogeneous set of tasks and to each operator) allowed the compliance with these procedures only for the parent company and for other five suppliers.

As can be seen in Table no. 1, all the partners promote lean behaviors. Lean management, Lean Manufacturing, or simply "Lean" is a practice that considers the resources expenditure for a purpose other than creating value for the end customer is a waste and thus a target for elimination. The system must be analyzed from the point of view of the customer who consumes a product or a service, and the "value" is defined as any action or process that a customer would be willing to pay. In essence, "Lean" is geared to value delivery with minimum work.

Learning and practicing the lean behaviors is related to understanding and assimilation into current manufacturing processes of the 5S principles, defined as a rigorous organized approach to achieve the optimum organization (sorting and arranging), the shining, standardization and the time entrench. Also like the 5S process, all the investigated organizations apply the in station process control philosophy (ISPC). The

process control insists more than in the non-productive fields on the rigorous control exercised by the teamleaders, supervisors etc., but also highlights the inoculation of the self-control .

Table no. 1 – *Lean tools and principles implemented in the Ford network*

Lean tools and principles ***Organizations integrated into the Ford's automotive network***	***5S***	***ISPC***	***Error proofing***	***Visual Management***	***Global 8D***	***Lean behaviours***	***Policy deployment***	***kaizen***	***QPS and WES***	Observations
Ford Motors Company	👍	👍	👍	👍	👍	👍	👍	👍	👍	Organize lean trainings lean for its major suppliers
International Automotive Components **(IAC) Group GmbH (Balş)***	👍	👍		👍		👍	👍	👍		
Chirchhoff Automotive Romania	👍	👍	👍	👍		👍	👍	👍	👍	
Johnson Controls	👍	👍	👍	👍		👍	👍	👍	👍	
Yazaki Caracal *	👍	👍	👍	👍		👍	👍	👍		Also implement some tools on their own - ex. the staff rotation.
Sumitomo Electric Wiring Systems (SEWS)	👍	👍		👍		👍	👍	👍	👍	
Magna Exteriors & Interiors	👍	👍		👍		👍	👍	👍		
BBB FASTENERS	👍	👍		👍	👍	👍	👍	👍	👍	
Kautex Textron GmbH & Co.	👍	👍		👍		👍	👍	👍		
Cooper Standard Romania	👍	👍	👍	👍		👍	👍	👍		
Faurecia Seating Craiova	👍	👍	👍	👍	👍	👍	👍	👍	👍	Achieved outstanding performance on 'savings' in 2013.

Also, the visual management proliferation was successfuly in the entire network. Visual Management is "the ability to understand the state of a production area in a few minutes, by the simple observation, without using a computer and without talking to somebody." With the help of visual management it can be achieve the signaling conditions of the occurence of an abnormal situation, and the enabling of the promptly implementation of corrective actions.

Global 8D is a tool developed by Ford for problem solving and for decision making. Although the management teams of the main partners receives advices towards the implementation of these methodologies, in Craiova's automotive industry, we can observe that the transfer and the successfully application of this tool face some delays generated, from our point of view, on the one hand by the reluctance of some Romanian managers of the supplyers or, on the other hand, by the recent collaborations between the driver-company and its partners.

Two other tools assimilated with the code of process improvements are reported also as implemented by all the investigated organizations: kaizen and the policy deployment. Kaizen means continuous improvement principles, relentless initiatives of the maximum extent of the solutions identification and to strive for improvements, principles assimilated into the collective mindset and organizational culture of companies. Policy deployment is a practical of strategies, policies and procedures implementation, in an

uniform way to all levels of enterprises, the deceleration of the best practices in all the organizational areas, the leaven of the positive ideas and the inoculation into managers and operators think of these practices.

By verifying the compliance of the lean principles implementation, we can observe that their achievement is remarkable in its entirety only at Faurecia Seating. Particularly interesting are the effects of this situation. According to the information gathered by the manager of this factory, the 2013 targets for savings were set at a level of € 200,000. At the utmost, the influence of the set of lean principles determine the overcomes on this indicator (an €500,000 threshold has been reached, which corresponds to 10% of the turnover) - the nominated values by the unit manager are eloquent. So the supposition regarding the utility of the lean system principles is confirmed.

5. CONCLUSIONS AND FUTURE INITIATIVES

Given the recent installation of the automotive industry in the region, the improvement processes falls into the category of *dynamic redesign*, the step-by-step typology in other words, and not into the changing pattern of the radical reinvention of the process.

Of great significance is noted to be the ISPC processes (in station process control), favored by the implementation at the major suppliers of the Ford's procedures system (QPS and WES).

Although our expressed oppinions do not want to be an eulogy, it is appropriate to point out that Ford Romania developed for himself and promoted and imposed to its major suppliers (its critic allies[1]) manufacturing system that prioritizes the process improvements. From our point of view, the system orchestrated in Romania by Ford is successfuly because it manages to create a spiral of improvements (the author's own phrase) that leverage the competitiveness of the whole sector.

Also for the Romanian business environment who face the corporate inertia (Jonas Ridderstråle and Kjell Nordström in Karaoke Capitalism), the improving management practices can be a source of inspiration and levers solutions in order to escape many of the businesses and fields of the current autopilot - rather a disoriented one.

From this point of view, we assume for our further priorities to investigate the state of knowledge and application of the principles of process improvements in some other fields, taking the recently manifested tendency in Western insurance companies, in health care facilities, government agencies, airlines, IT operators and so on. Although the lean techniques are invented to optimize the production domains, there will be tested the possibilities for application of tools to eliminate waste in services (tourism industry) and public organizations.

In the long time horizon, we intend to continue our study by checking the correlation of the results of the implementing the processes improvements management tools and its economic benefits and also the competitiveness of organizations by adapting some of the reference models present in the literature (Sezen et.al., 2012).

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[1] thus named in the Ford's own reports - http://corporate.ford.com/doc/sr11-supply.pdf , accesed in 6.11.2014.

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