

practice. If on the other hand the documentation is artificial and blurred, the workers will never accept it. In the surveyed institutions a lot of faults have been discovered, unfortunately at the stage of training and preparing the documents. The quantity and quality of the mistakes will determine further functioning of the system and proqualitative changes within the investigated institutions. The faults at this stage are very difficult to eliminate later in the course and therefore they determine the system functioning. While analyzing other stages of system constructing it is easy to notice some other factors which influence the effectiveness of the system. Advisory group or an individual advisor will model and assist with the process of system constructing. Proper selection of the advisory group determines the success. They should think of the characteristics and needs of the institution. They should make it open and friendly for the future users. The stage of launching the system is very important as well. The system is tested in practice and in real conditions of the institution. Time is needed to test the system, introduce necessary changes and modification. These will help adjust the system for the needs of a given institution and make it more effective in the end. The process of system evolution performed during internal audits provides useful information about necessary changes and improvements of the system which again causes its better functioning. Finally, it is important to state that the whole process of constructing affects the effectiveness of the functioning system though each stage influences the process in a different way. Moreover, it should be underlined that in the surveyed institutions the process caused some proqualitative changes. The process initiated the changes in the employees' attitude and understanding of the clients' needs. However, the scope and intensity of these changes vary from institution to institution. All the surveyed institutions identify the benefits both external and internal which the system generates. There is certain regularity which shows that the stronger the commitment of the senior management and the better the process is organized the more benefits (external and internal) are achieved. Quality management system can be perceived as a kind of toll used to improve the institution performance. It is important though, to what extent is the institution involved into constructing this tool because it should help generate the success.

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ADVANCED PRODUCT QUALITY PLANNING AT THE EXAMPLE OF THE AUTOMOTIVE INDUSTRY SUPPLIERS IN POLAND

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Abstract: Advanced product quality planning (APQP) is one of the basic processes of suppliers' quality management systems in case of original equipment (OE/ OES). That process, which is required by every automotive clients is defined in some different way and differently connected with other elements of management and product and process' quality forming. Planning and implementing of that process lays many organization difficulties, investment also, especially for the firms, which look for their' chance at the automotive market, not having any experience in that matter. Results of research applied to APQP let describe the conclusions which could be useful to implementing the quality management systems according to international standards ISO/ TS 16949:2002 and others of automotive branch[1].

ADVANCED PRODUCT QUALITY PLANNING – BACKGROUND

Advanced product quality planning is the method of defining and establishing steps necessary to guarantee full customer satisfaction of product ordered. APQP is the process which, if it is accomplished in a correct way and given positive results, determines contact and keeping on the deliveries to OE (original equipment) in automotive suppliers chain. Practice shows that ability of carrying out APQP and PPAP (production part approval process) is determining supplier's position apart if he delivers to car producer directly or if he is the first, second or third place supplier [2].

OE and AM (after market) automotive market is very attractive not only for companies, which are typical automotive suppliers[3]. Many of polish companies

try to win clients from car producers or first place suppliers. Especially at the beginning, when the first analysis of automotive market clients' requirements is carrying out, turns out that these are much more difficult to fulfill than these to which companies manufacturing for different branches got used to. Often at the beginning deliveries for automotive branch are just the small part of total production and deliveries. But because of those customers' attractiveness usually plans of orders increasing and getting another clients from that field are causing the necessity of APQP process familiarize and realization. In that matter polish companies' experiences shows many problems with implementation of this process' elements. This article shows specificity and trends characterizing automotive suppliers market, describing advanced product quality planning process and is the source of information for present and potential automotive industry suppliers. Author thinks that substance of this article is sort of universal guide for different organizations which can use some parts of APQP process to identify and fulfill clients' requirements irrespective of branch and particular business activity. Towards the evident tendency to migration of companies producing parts to Western European cars among others to Eastern Europe countries, towards many economic reasons explaining this phenomenon, there is necessity of paying attention to processes ensuring quality of delivers from new locations. In case of realizing deliveries to, so called, first equipment (OE/OES) it is relating to APQP process - advanced product quality planning [4].

Automotive suppliers migration

Completion which was always connected with car concerns increased especially in crisis time for that branch. Cars producers' constant objects - technical and technological innovations, perfect quality and sureness had to be expanded. Maintaining and enhancing the market position of any concern was connected very hardly to necessity of radical decrease of production and car sale charge. Answers for that challenges are very unequivocal. Cars can be bought via internet or from dealers who offer different marks contemporary. And because of pure sale of new cars what is partly delimited by significant allowances market fights descending margins. Market price pression is moved on suppliers, because of what manufacturing costs reducing became the main challenge to cope with. Besides there is noticed moving the risk connected with expansion by car producers concerns. Suppliers then face nowadays against serious dilemmas. On the one hand they are made to demonstrate their leading position in technological development and costs reduction. From other they have many problems connected with extension funding [5, 6].

During the past few years at the original equipment suppliers market of automotive market are noticed essential trends, which directly effect to necessity of implementing the specified quality ensuring standards. Presently almost half of

global car subassembly suppliers lead in the same time, and sometimes entirely, business activity beyond the native location in Western Europe. These locations are placed in eastern European countries or in China, less in both America and India. Analysis car subassembly producers market allows unequivocal defining market characteristics:

- migration production plants, working for car producers from native lokations Western Europe to markets allowing cheaper manufacturing,
- accumulation first place suppliers in OEM parts, because of JIT deliveries requirements,
- importance of outsourcing increase and elongation automotive deliveries chain in connection with,
- more frequent efforts of winning automotive supplier status undertaken by plants with no experience at that market.

Market changes above are imposed by necessity of decreasing prices of new cars and discount that fact by car concerns through displacing that necessity to suppliers[8].

Advanced product quality planning (APQP) - importance

Advanced product quality planning (APQP) is one of the most important process determining requirement QS-9000 and ISO/TS 16949:2002[1][7]. Could by thought that requirements connected with would be appropriate and adequate only for automotive branch companies. Better knowledge of this process allows entertaining the efforts of its implementation in different companies also, and comfort related to gratuitousity of these efforts entertaining would be a flexibility and efficiency ally.

Assumptions of advanced product quality planning are important amplification of idea quality planning and should base on its principles. This article describes APQP principles comprehended with QS-9000 and ISO/TS 16949:2002[9] requirements, points out legitimacy of its usage in organizations any sort, not only automotive branch.

In any case the base of activity being undertaken is identification actually realized quality planning processes. Even as quality system, as its part - APQP should based on already realized, tested and effective solutions connected with quality planning.

In many companies quality planning is the vulnerable point in quality ensuring process. Analyzing objects to which quality planning should be achieved - the present condition is surprised. From the other hand even ISO 9000 norms do not obligate to specific activity on that field. In consequence there is no necessity to prepare formal documents concerning quality planning - quality plans, which necessity would assure objects that should be realized thanks to quality planning course. Quality plans, even if they come into being, are dealt like one and only

process aspect. As a matter of fact they are just a record, that is an evidence of quality process realization, whereas should be the supporting character[10].

In case of ISO/TS 16949:2002 and QS-9000 requirements is differently. Big Three (DaimlerChrysler, Ford, General Motors) and many else car producers unequivocally expect quality planning from their suppliers, appealing in that case to document *Handbook Advanced Product Quality Planning and Control Plan* (APQP and CP)[11].

With some probability dose there would be an assumption that advanced quality planning will be a process obliging not at automotive market only but get into constitution unified quality management standards. Perhaps turns out that irrespective of the requirements sharpness this is beneficial and effective process, which deserves for maturing and using in scope of development and improving quality system[12].

CONCLUSION

Advanced product quality planning process (APQP) is obligatory component of system quality management at automotive suppliers market. Every company being automotive parts supplier and also every company planning the expansion to this market shall master APQP procedures (likewise PPAP – production part approval). Standard in this respect is handbook calling over by QS-9000 – APQP/CP estimating arbitrarily by certification bodies' auditors and during the clients audits. This is the philosophy requires entire organization engagement and on the other hand very concret procedure at PPAP scope. Present process is determined by clients' requirements and expectations, bases on stages most often indicated by clients, which are realized meeting many factors e.g. costs, particular realization time, production specificity, disconnecting from quality management system. Discussed in advance APQP process stages let the organization establishing and development effective process, irrespective of complication measure and project's individuality.

Besides APQP process let the company not only fulfill ISO/TS 16949:2002 primary requirements but also adapt the organization to use them in common company practice with benefit for clients and company itself. Cooperation experiences in American and Polish companies indicate that activities undertaken in APQP process, if they are chosen correctly and properly realized, are very beneficial business processes parts. However, the principle should be an effort of adapting some quality planning elements already existing and realizing in previous company practice.

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