practice. If on the other hand the documentation is artificial and burrled, the
workery 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 procedures will determine further functioning of the
system and prospective 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 factor 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 determine 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 used in
practice and in real conditions of the institution. This is needed not for the system,
introduce necessary changes and modifications. 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 auditors needs useful
information about necessary changes and improvements of the system which makes
causes it to better functioning. Finally, it is important to state that the whole process
of constructing affects the effectiveness of the functioning system through each
stage influences the process in a different way. Moreover, it should be understood
that in the surveyed institutions the process caused some prospective changes.
The process initiated the changes in the employees’ attitude and understanding of
the client’s 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 more
the process is organized the more benefits (external and internal) are achieved.
Quality management system can be perceived as a kind of tool used to improve the
institution performance. It is important though, to what extent 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 system is one of the key elements in the process, which is
required by every automotive client is defined in some different ways and
differs, what is also connected with other elements of management and product and process
quality forming. Planning and implementing a best process that meets the requirements of
the automotive market is the main challenge for every car manufacturer. Results of research
performed in APQP in the automotive industry confirm that the use of APQP is
effective in improving the quality management system according to standards ISO 9001:2000
and of automotive industry[5].

ADVANCED PRODUCT QUALITY PLANNING – BACKGROUND

Advanced product quality planning is the method of defining and establishing
steps necessary to ensure full customer satisfaction of product offered. APQP is
a process which, if it is accomplished in a correct way and gives positive results,
determines contact and keeping on the deliveries to OE (original equipment) and
automotive suppliers chains. Practice shows that ability of carrying out APQP and
PPAP (production part approval process) is determining supplier’s position and
his ability to produce products of quality. APQP and PPAP ensure quality of
OE and AM (after market) automotive market is very attractive not only for
companies, which are typical automotive suppliers[5]. 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 carried out, turns out that these are much more difficult to fulfill than those to which companies manufacturing for different branches are used to. Often at the beginning deliveries for automotive branch are just the small part of total production and deliveries. But because of these customers’ attractiveness usually plans of orders increasing and getting needed clients from that field are causing the necessity of APQP process familiarization and realization. In that matter polish companies’ experiences shows many problems with implementation of this process’ elements. This article shows specificity and trends characterising automotive suppliers market, describing advanced product quality planning process and is the source of information for present and potential automotive industry suppliers. Author thanks 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 deliveries from new locations. In case of realizing deliveries to, so called, first equipment (OEM/ODM) it is relating to APQP process – advanced product quality planning [4].

Automotive suppliers migration

Competition which was always connected with our concerns increased especially in crisis time for that branch. Cars producers’ constant objects – technical and technological innovations, perfect quality and survivors had to be expanded. Maintaining and enhancing the market position of any concern was connected very heavily to necessity of radical decrease of production and car sales charge. Answers for those challenges can be varied. Cars can be bought via internet or from dealers who offer different terms contemporary. And because of part side of new cars what is partially defined by significant allowances market fights demanding means. Market price position is moved on suppliers, because of what manufacturing costs reducing became the main challenge to cost rules. Besides there is necessity moving the role connected with expenses by car producers concerns. Suppliers then face nowadays against serious dilemma. 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 the original equipment suppliers market of automotive market are noticed essential trends, which directly effect in necessity of implementing the specified quality ensuring standards. Presently almost half of global car subcontractors 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, but in both America and India. Analysis car subcontractors producers market allows unproblematic defining market characteristics:

- migration production plants, working for car producers from native locations in Western Europe to markets allowing cheaper manufacturing,
- accumulation first place suppliers in OEM parts, because of BT deliveries requirements,
- importance of outsourcing increase and stagnation 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 16949:2009[17]. Could be thought that requirements connected with would be appropriate and adequate only for automotive branch companies. Better knowledge of this process allows enhancing the effects of its implementation in different companies also, and comfort related to gratification of these effects obtaining would be a flexibility and efficiency ally.

Assumptions of advanced product quality planning are important simplification of data quality planning and should base on its principles. This article describes APQP principles comprehended with QS-9000 and ISO/TS 16949:2009[19] 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 in 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 surprising. From the other hand even ISO 9000 system do not oblige to specific activity on that field. In consequence there is no necessity to prepare formal documents concerning quality planning – quality plans, which necessity would secure objects that should be realized thanks to quality planning course. Quality plans, even if they turn 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 (Daimler Chrysler, Ford, General Motors) and many other car producers surprisingly expect quality planning from their suppliers, patterning in the case to document “Handbook Advanced Product Quality Planning and Control Plan (APQP) and CPK”(11).

With some probability done there would be no assumption that advanced quality planning will be a process obliging not at automotive market only but get into consideration unified quality management standards. Perhaps turns out that irrespective of the requirements depthness this is beneficial and effective process, which deserves for researching 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 intention 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 client audits. This is the philosophy requires entire organization engagement and on the other hand very concrete procedures at PPAP scope. Present process is determined by clients’ requirements and expectations, bases on stage most often indicated by clients, which are realized meeting many factors e.g. costs, particular realization time, production specifically, disconnecting from quality management system. Discussed in advance APQP process stages let the organizations establishing and development effective process, irrespective of complications 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 benefits 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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