CHALLENGES FOR COMMODITY SCIENCE IN THE XXI[st] CENTURY

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Summary

There are several challenges which commodity science will face in the next century. The first one is connected with its name, which in the present form does not explain the aim and scope of this field of science and does not fit its true meaning. We have to accept that reaching technical excellence becomes now trivial with quality ISO and TQM systems and computerized automation. Last but not least we have to appreciate the fact that for us the major task is to help the consumers who are the most important entities in the free market system. The fate of good quality products and services in hands of the consumers seems to be the crucial challenge for commodity science, especially because nobody else is able to enter this field. The next problem is connected with the rapid growth of the importance of the natural environment and never more good quality will be possible without fulfillment of ecological requirements. The only perspective worth our efforts is good quality of life in conditions of sustainable economy.

Commodity science?

The above name is coming from the direct translation of its origin in Italian (Merceologia) and German (Warenkunde) languages and was quite correct during the medieval ages and up to the first part of XX[th] century. The merchands traveling all over the known world ought to have enough knowledge to recognize good and bad quality of the raw materials and commodities, also some knowledge on technologies applied and to learn everything possible concerning the properties and ways of use of the commodities they offered. In some way the merchands behaved passively towards what they were trading and their main aim was to sell their commodities for the highest possible price. It is not surprizing that this was generally recognized and already in the Rome Empire the popular warning in this respect was: „Caveat emptor" explaining in this Latin-Greek expression the relation between the merchants and the consumers.

Attempts to introduce for this field of interest a name internationally understandeable was not very successful as the proposed „Merceologia" was not understood in the nations in which Latin language was not taught (the same was true for its Greek version), so finally we have introduced the name „Commodity science" which in turn is not intuitively understood by native Englishmen or Americans. Nevertheless, this name is functioning and helps us to organize international cooperation and exchange of ideas, leading eventually to recognition of a more important problem, the aim and scope of „Commodity science".

In course of many discussions held during recent meetings of the International Society of Commodity Science and Technology (currently referred to as Internationale Gesellschaft für Warenwissenschaft und Technologie, IGWT) and other fora including

the Workshop held in Poznań in May 1998, it was concluded that we are facing new challenges differing substantially from those in the past. The most important difference is connected with the recognition of quality (good quality) as the clue of our field of interest. Following the generally accepted definitions of quality and its two main features described as technical excellence and innovativeness, one has to accept the following:

owing to progress in technology and implementation of ISO and TQM standards, attainment of technical excellence became trivial;

maintaning the quality of a commodity cannot be the only obligation of a commodity science expert;

the main responsibility of a commodity science expert should be now safeguarding the quality of a product in the hands of the consumer.

The first of the above statements does not need any explanation, in the times of inadequate quantity and quality of production in the early stages of industrialization and then within the „shortage economy" of the so-called socialistic states, the commodity science experts were forced to work on increasing the bulk of production by developing technologies, almost forgetting that quality is the most important feature. Nowadays we have to influence the process of creating idea of a new product, its design, choice of the applied materials and technologies, all from the point of view of the optimal quality for the benefit of the consumer.

When the product is already manufactured it is being passed to the wholesale and retailsale systems and begans its life as a new economic entity: commodity. In this moment all important decisions and procedures determining the quality of the product have already been undertaken and/or performed and if there have been done mistakes nothing can be improved (bad design, unproper materials and technology, unsatisfactory performance and durability, endangerment for the environment when disposing the exploited item etc.). The only thing which could be proposed in this stage of existence of a product as a commodity is maintaining the quality already achieved by the producers, by application of proper storage and transportation conditions, proper exposition on the shelves in shops and transfer into the hands of the consumer. Qualifications of the modern commodity science experts are much higher than those necessary for such rather simple tasks.

So, what remains for the commodity science experts? In my opinion the most important task for them should be controlling the quality of a product during its whole lifecycle, with the emphasis on the time which the product spends in the hands of the consumer. The consumer is the most important entity in the economy, all the economic activities are undertaken to satisfy the needs of the consumer, and despite his crucial role in economy he is readily forgotten once he has purchased the item named „commodity". But only now the commodity, once again being a product „in use" starts its real and important life, trying to satisfy the needs of the consumer. Who interests himself with what is going in this stage? From the moment of expiration of the guarantee (all kinds of) practically nobody, and the consumer is being left alone, because he cannot be regarded as aa potential buyer for a given time. Here should enter the commodity science expert, who should help the consumer to use the purchased product in the optimal way, we do not know any other specialist who can better fulfill such a role.

If so, we have to conclude that creating the idea of new product, influence on its design, materials and technologies used, packaging materials, storage conditions, of course also logistics, then exploitation instructions during the use of the product, eventually also controlling the rationality of disposing the rest of the exploited product — it is in fact

product management and remembering that the most important feature of the product is quality — *quality management*, having much broader sense.

The proposals concerning the name of our field of interest of truly interdisciplinary character, has been extensively discussed also during the 12th IGWT Symposium „Quality for the XXIst Century", which has been held in Poznań-Gdynia (Poland) on September 5-11, 1999 [1]. Although no decisions have been undertaken there were no objections to the already introduced changes of names of several units like Faculty of Commodity Science and Quality Management in the Bucarest University of Economics, the Committee of Commodity Science-Quality Science of Polish Academy of Sciences, branch in Poznań, or in information leaflet of the Faculty of Commodity Science-Quality Management issued under this name by the Faculty of Commodity Science of the Poznań University of Economics. The search for a most adequate name for our field of interest will be continued.

Ecoquality and commodity science

Since the publication of the „Club of Rome" report in the 50-ties it became obvious that the age of careless exploitation of the natural environment and the renewable and nonrenewable sources of raw materials has come to the end. Though the prognosed deadlines have proven not very adequate, pretty soon the „oil crisis" in 1970 has shown how strongly our civilization and welfare depend on energy sources. Only then first serious attempts have been undertaken to limit consumption, rationalize production and eliminate misuse of natural resources and energy carriers. Gradually it became clear that human beings are the immanent part of the natural environment and saving it means hope for prolonged existence for the next generations. We are not quite sure whether the ecological catastrophe has already occurred to the extend making it irreversible, we can measure the changes in the size of the ozone hole, we believe that we understand the photochemical reactions involved, the amount of chlorine released already in freons and other compounds, we believe that reduction and ban of freon production will be an adequate measure to stop ozone layer depletion. But it may appear that all arguments used by states and lobbies trying to avoid any international obligatory regulations are totally wrong and it will be to late to undertake any reasonable action.

For such reasons it is generally accepted to treat ecological problems as inevitable in defining good quality, that there is no good quality without compliance with ecological aspects. This has been also noticed by the people working in marketing and constructing systems of integrated product Policy and eco product development [2]. Among many important topics in scientific research, which will be important for humanity forever, on one of the first places will keep ecology. Consequently, if commodity science-quality science wants to be treated seriously the ecological problems have to be present in all our studies and analyses. This was clearly proven by the amount of studies and reports presented to the 12th IGWT Symposium recently. The pollution distributed almost evenly through atmosphere all over the world is obviously responsible for many effects endangering our health and future, pollution of water and soil with heavy elements, organic compounds etc., toxic, cancerogenic, mutagenic — penetrating our bodies through the nutritional chain and direct contacts with our organisms, but also ptotodynamic killing of forests, exterminations of many living species both of plant and animal origin, may not so slowly lead to fatal end the world we seem to understand.

Therefore it is of extreme importance to start and continue a complex effort of introducing the quality priority including the ecological issues. The commodity

science-quality science experts, representating the only profession whose main aim is to help the consumers to recognize the good quality and to use it in the optimal (most rational=economical) way, bear serious responsibility for implementation of the ecological issues within the society. Fortunately nowadays it is widely accepted that the aim of the economic development can not be unlimited but should be defined as sustainable economy. Sustainability understood as equilibriated level of the potential to generate new fabricated capital and natural capital (natural resources) and the depreciation of the fabricated and natural capitals, all as percentage of GDP (gross domestic product), will achieve the best level in case when both natural and fabricated capitals could be kept constant (what is not the case even in the best developed countries).

To this aim we have to know how to calculate the natural capital and up to now the attempts were not very successful. The problem arises from the fact that it is not so easy to compare the values of different natural resources, though it was agreed upon that the best measure should be energy (taking energy of the sun as a standard) we are still having problems. Without such an universal measure of energy it will not be possible to construct eco-balances, and without eco-balances we will never be able to calculate the real cost of natural resources, or how high are the valuables credited us by the natural environment. Recently a new attempt has been undertaken by an international team in the University of Santa Barbara [3], who proposed a stricly scientific wasy of calculation based on classification of sources and their potential value depending on different ways of use. According to these data estimated recreational and cultural values of different ecosystems are quite high e.g. marine coastal 82/62, forest 66/2, lakes and rivers 230 (recreational/cultural, in 1994 US$/ha,yr). Although some of these values seem strange, further development of such calculating systems might help us in rationalizing our real expenses and values in production and services of all kinds.

Recently the new report of „Club of Rome" has been published pursuing the idea that to survive the human society has to double the welfare along with twofold reduction of use of natural resources [4]. In this report it is shown on more than 80 examples that this target is practically accessible with almost no investments. To this aim necessary is rational use of what is already known in natural and technical sciences, good management in the conditions of free market sustainable economy and political will.

I am deeply convinced that this idea is fitting our aim and scope, that we have to accept it as ours and to engage ourselves wholeheartedly to promote this program.

References:

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